

**APPENDIX A**  
**TRAFFIC STUDY SCOPE OF WORK**

# MEMORANDUM

To: Dave Roseman, P.E.,  
City Traffic Engineer  
City of Brea

Date: December 21, 2021

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From: Richard E. Barretto, P.E., Principal  
LLG Ref: 2.18.4052.1  
Linscott, Law & Greenspan, Engineers

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Subject: ***Traffic Circulation Assessment Scope of Work for Brea 265 Specific Plan  
Brea, California***

Linscott, Law & Greenspan, Engineers (LLG) is pleased to submit the following Scope of Work for the Traffic Circulation Assessment for the proposed Brea 265 Specific Plan Project in the City of Brea for your review and approval. It is our understanding that a Traffic Circulation Assessment is required to provide consistency with the General Plan. The work program summarized below is based on our current experience within the City, prior coordination efforts with City staff on this project, as well as our understanding of the City's requirements.

## **Circulation Assessment Scope of Work**

**A. Project Location:** The Brea 265 Specific Plan is a master planned residential community consisting of 260.7 acres located in the City of Brea and unincorporated Orange County; although not a part of the Specific Plan, an additional 1.4 acres of open space located on the northeast corner of Valencia Avenue and Rose Drive has been included this resulting in a total overall acreage of 262.1 acres. The proposed Project is generally located east of the State Route (SR) 57 Freeway and north of SR-90 (Imperial Highway), towards the eastern portion of the City and is surrounded by existing residential neighborhood communities, the Brea Sports Park and Carbon Canyon Regional Park. The Specific Plan area is bisected by Valencia Avenue which runs in a north-south direction, and by Lambert Road which runs in an east-west direction. The Project site is located to the south of Lambert Road/Carbon Canyon Road, north of Rose Drive, east of Valencia Avenue and west of Carbon Canyon Regional Park. Of the 217.7 acres located within unincorporated Orange County, 123.2 acres is currently designated as "Hillside Residential" and 94.5 acres is designated as "Low Density Residential" land use in the City's General Plan. The 43-acre portion of the Project that is located within the City is designated as "Hillside Residential".

**Figure 1-1** presents a Vicinity Map that illustrates the general location of the Project and surrounding street system. **Figure 2-1** is an existing aerial photograph of the Project site.



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## **B. Project Description:**

### General Plan Zoning

As indicated previously, the Projects General Plan zoning for the site is to be developed with 166.2 acres of “Hillside Residential” uses, which equates to 332 single family dwelling units (DU) at an assumed density of 2 DU per acre (166.2 acres x 2 DU/acre). For 94.5 acres of “Low Density Residential” use, the Project zoned to develop with a maximum density of up to 6 DU per acre. However, based on surrounding residential development, a density of 3 DU per acre has been utilized for the “Low Density Residential” uses, which translates to 283 single family dwelling units (94.5 acres x 3 DU/acre). Therefore, the Project site has a zoning development of up to 615 single family dwelling units.

### Proposed Project

The proposed Project is a master planned residential community of low-density, medium-density, and high-density residential neighborhoods, parks, recreational amenities, and open space within thirteen (13) planning areas (PA) of the proposed specific plan. The Project will include a mix of approximately 1,100 residential dwelling units on 197.5 acres, up to 15.1 acres of parks/recreations uses, including up to 13 acres of Sports Park uses adjacent to the existing Brea Sports Park and a 2.1-acre Trail Staging Area, and 47.5 acres of open space/slopes. The proposed Project allows for a fire station and police substation on a 1.0 acre site on the northwest corner of Lambert and Valencia. Inclusion of 2.0 acres of Master Plan Right-of-way results in a total project acreage of 262.1 acres. Affordable housing units are also included as part of the total dwelling units proposed for the Project. The proposed Project would be phased and constructed based on market conditions. The proposed land uses would be linked together by an extensive trail network that will connect to the Tracks at Brea and other regional systems, as well as to the adjacent neighborhoods and off-site parks, open space, and surrounding employment centers and retail venues.

Per the Project’s development tabulation, two (2) residential land use categories are proposed and consists of 450 “low density” DU, and 650 “medium density” DU, with 15.1 acres of parks/recreations uses, including up to 13 acres of Sports Park uses adjacent to the existing Brea Sports Park and a 2.1-acre Trail Staging Area. From review of the Project’s details, the above-referenced land uses translate to the development of 450 single family detached DU, and 650 single family attached DU (i.e. townhomes, row homes, detached cluster homes, attached motorcourt homes, etc.). The proposed Sports Park component of the Project is essentially an expansion of the existing Brea Sports Park, that together

will provide the Brea community and new residents of the Project with recreational opportunities.

For the purposes of this analysis, the Project site was split into three (3) zones. Zone 1 is the portion of the Project site located north of Lambert Road. Zone 2 is the portion located south of Lambert Road, west of Valencia Avenue (includes proposed Sports Park). Zone 3 is the portion located east of Valencia Avenue and east of Rose Drive. **Table 2-1** provides the Project development summary. **Figure 2-2** illustrates the Brea Specific Plan Land Use Plan for the Project. This figure generally illustrates the Parks and Open Space plan for the Project as well.

For our understanding, units may be transferred between land use designations and locations so long as the total number of units does not exceed 1,100 units and the number of units in the planning area does not exceed the maximum number of dwelling units per acre permitted for the planning area's land use designation.

#### Vehicular Site Access

Subject to confirmation and review of the Project's access and circulation plan, it is our understanding that vehicular access to the Project from the public streets bordering the subject property will be provided via one (1) full access signalized driveway on Lambert Road, one (1) full access signalized driveway on Valencia Avenue, one (1) full access unsignalized driveway on Rose Drive, and one (1) full access signalized driveway at the existing intersection of Rose Drive at Vesuvius Drive. Vehicular circulation internal to the various proposed neighborhoods will be provided by a system of local residential streets.

For the proposed Sports Park, it is assumed that primary vehicular access will be provided via the proposed signalized Project entries on Valencia Avenue and on Lambert Road, with additional vehicular access provided through the existing Brea Sports Park via the unsignalized easterly park driveway located on Birch Street. It is assumed that the "loop" road, which now serves as a "fire lane" and is used by authorized park service vehicles, will be open to through traffic as well as provide for pedestrian and bicycle connectivity.

Project-sponsored proposed intersection lane configurations and traffic controls for the Project's vehicular access points noted above, subject to confirmation, includes the following Project Design Features:

- Lambert Road, from Valencia Avenue west along Project frontage to just east of Sunflower Street - widen and construct Lambert Road along project frontage to Major Arterial Highway Standards per the City's requirements, providing three 12-foot travel lanes and an 8-foot bike lane in each direction,

separated by a 14-foot median within 88-feet of paved width and a right-of way of 120-feet. Lambert Road currently includes two travel lanes in each direction, midblock along the Project frontage.

- ❑ Carbon Canyon Road (SR-142), from Valencia Avenue east along Project frontage - widen and construct the south side of Carbon Canyon Road along project frontage to ultimate half-section width per the City's Major Arterial Highway standard and provide three 12-foot travel lanes and an 8-foot bike lane in the eastbound direction, separated by a 14-foot median within 88-feet of paved width and a right-of way of 120-feet. Carbon Canyon Road currently includes three travel lanes, narrowing to two lanes in the easterly direction along the Project frontage.
- ❑ Valencia Avenue (SR-142), from Lambert Road/Carbon Canyon Road south to along project frontage - this state route is currently improved to the City's Primary Arterial standards, and now provides two travel lanes and an 8-foot bike lane in each direction, separated by a 14-foot median within 84-feet of paved width and a right-of way of 100-feet; no additional travel lanes are proposed with the Project.
- ❑ Rose Drive, from Valencia Avenue south along Project frontage to Vesuvius Drive - widen and construct the east side of Rose Drive along project frontage to Primary Arterial Standards per the City's requirements, providing two foot travel lanes and an 8-foot bike lane in the northbound, separated by a median within 42-feet of half-paved width and a 50-foot half right-of way. To achieve two southbound travels lane along the Project's entire frontage, modifications to the future median and/or lane widths may be needed. Subject to the City's review/approval, it is expected that the design of second southbound through lane will require motorist to merge left to continue through and be terminated as a right-turn lane at the intersection of Rose Drive and Vesuvius Drive to align with the existing southbound right-turn lane at this intersection. Rose Drive currently includes one travel lane in each direction and bike lanes, separated by a painted median.

**Figure 2-3** illustrates the Project's Circulation Plan as presented in the Brea 265 Specific Plan.

#### *Pedestrian and Bicycle Circulation*

**Figure 2-4** illustrates the Non-Vehicular Circulation Plan that identifies the existing trails/sidewalks adjacent to the Project site and the proposed trails within the Project site as presented in the Brea 265 Specific Plan. In addition to the trail

and pedestrian connectivity proposed by the Project, a planned bikeway system will facilitate continuous bicycle access throughout the Project site, linking the site the current bicycle facilities in the immediate area. On-street bike plane will be provided on both sides of Lambert Road, Valencia Avenue, and Rose Drive, and on the south side of Carbon Canyon Road upon completion of proposed Project Design Features.

**C. Traffic Study Locations:** The following twenty-two (22) key study intersections, along with the applicable jurisdiction and/or City location, have been identified based on coordination with the City, for which the Project’s potential traffic impact is to be assessed. *Figure 1-1* identifies the study locations.

As a result of SB743, traffic studies are no longer a CEQA requirement. Hence, subject to confirmation by the City Traffic Engineer, Level of Service (LOS) calculations would be prepared at these locations:

**TABLE 1-1  
 KEY STUDY INTERSECTIONS**

| Key Intersection   | Applicable Jurisdiction (City Location) |              |
|--|---|--------------|
|  | Caltrans                                | City of Brea |
| 1. State College Boulevard at Lambert Road               | --                                      | Brea         |
| 2. SR-57 SB Ramps at Lambert Road                        | Caltrans (Brea)                         | --           |
| 3. SR-57 NB Ramps at Lambert Road                        | Caltrans (Brea)                         | --           |
| 4. Pointe Drive at Lambert Road                          | --                                      | Brea         |
| 5. Wildcat Way/N Associated Road at Lambert Road         | --                                      | Brea         |
| 6. Santa Fe Road/Kraemer Boulevard at Lambert Road       | --                                      | Brea         |
| 7. Sunflower Street at Lambert Road                      | --                                      | Brea         |
| 8. Valencia Avenue at Lambert Road/Carbon Canyon Road    | Caltrans (Brea)                         | --           |
| 9. Santa Fe Road at Carbon Canyon Road                   | Caltrans (Brea)                         | --           |
| 10. State College Boulevard at Birch Street              | --                                      | Brea         |
| 11. S Associated Road at Birch Street                    | --                                      | Brea         |
| 12. N Associated Road at Birch Street                    | --                                      | Brea         |
| 13. Kraemer Boulevard at Birch Street                    | --                                      | Brea         |
| 14. Valencia Avenue at Birch Street/Rose Drive           | Caltrans (Brea)                         | --           |
| 15. Rose Drive at Vesuvius Drive                         | --                                      | Brea         |
| 16. SR-57 SB Ramps at Imperial Highway                   | Caltrans (Brea)                         | --           |
| 17. SR-57 NB Ramps at Imperial Highway                   | Caltrans (Brea)                         | --           |
| 18. Associated Road at Imperial Highway                  | Caltrans (Brea)                         | --           |
| 19. Castlegate Lane/Placentia Avenue at Imperial Highway | Caltrans (Brea)                         | --           |
| 20. Kraemer Boulevard at Imperial Highway                | Caltrans (Brea)                         | --           |
| 21. Valencia Avenue at Imperial Highway                  | Caltrans (Brea)                         | --           |
| 22. Rose Drive at Imperial Highway                       | Caltrans (Placentia)                    | --           |

- D. Traffic Counts:** Based on current conditions, due to COVID-19 pandemic, the ability to collect traffic counts to establish baseline conditions is not possible. As such, to establish existing “baseline” traffic conditions, pre-COVID-19, LLG has researched historical data and was able to obtain Year 2018 counts at all twenty-two (22) key study locations. As such, to establish existing “baseline” traffic conditions, an annual growth factor of 1% per year will be applied to the Year 2018 conditions to establish Year 2021 pre-COVID-19 baseline traffic conditions.
- E. Project Traffic Generation:** The trip generation potential of the proposed Project will be estimated using trip rates contained in the 11<sup>th</sup> Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE), [Washington, D.C., 2021]. *Table 5-1* summarizes the trip generation rates used in forecasting the vehicular trips generated by the proposed Project and also presents the project’s forecast peak hour and daily traffic volumes.

Based on the Project description, the upper portion of *Table 5-1* identifies land use categories and trip rates which were considered in forecasting the trip generation of the Project. The land uses include ITE Land Use 210: Single Family Detached Housing, 215: Single Family Attached Housing, ITE Land Use 220: Multifamily Housing (Low-Rise), and ITE Land Use 488: Soccer Complex. The trip generation potential of both the Project’s medium density (“multifamily” and “single family attached”) components will be forecast based on ITE Land Use 215: Single Family Attached trip rates. Given the description of the Project’s proposed Sports Park component, the trip generation potential will be forecast based on ITE Land Use 488: Soccer Complex<sup>1</sup> trip rates.

A review of the lower portion of this table indicates that the proposed Project is forecast to generate approximately 9,351 daily trips, with 634 trips (182 inbound, 452 outbound) produced in the AM peak hour and 893 trips (542 inbound, 351 outbound) produced in the PM peak hour on a “typical” weekday.

- F. Project Trip Distribution Pattern:** *Tables 5-2 and 5-3* present the overall directional north/south/east/west distribution pattern for the residential and sports park components, respectively. *Figures 5-1 through 5-5* present the detailed Project Trip Distribution for Zone 1, Zone 2A, Zone 2B, Zone 3A and Zone 3B for review by the City. Project traffic volumes, both entering and exiting the site,

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<sup>1</sup> Per Trip Generation, a soccer complex is an outdoor facility that is used for non-professional soccer games. It may consist of multiple fields. The size of each field within the land use may vary to accommodate games for different age groups. On-site amenities may include stadium seating, a fitness trail, an activities shelter, aquatic center, picnic grounds, basketball and tennis courts, and a playground, similar to the proposed Project’s Sports Park component. For this analysis, it is assumed up to two (2) full-sized soccer fields will be provided. However, when taking into consideration that a full-sized soccer field can be subdivided into approximately 2-3 child-sized fields, this analysis will conservatively analyze a total of six (6) soccer fields.

have been distributed and assigned to the adjacent street system based on Project Select Zone model runs and were further refined based on the following considerations:

- location of site access points in relation to the surrounding street system,
- the site's proximity to major traffic carriers and regional access routes,
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns,
- presence of traffic congestion in the surrounding vicinity,
- ingress/egress availability at the project site, and
- prior discussions with City Staff.

#### **G. Near-Term Cumulative Background Traffic:**

- Project Completion Year: 2035. The proposed Project is expected to development in several phases between 2023 and 2030, but is dependent on several factors, including the timing of Project approval, Project funding, market conditions, site preparation and/or the current COVID-19 environment which could delay the Project. As such, the Year 2035 has been utilized to assess the Project's potential traffic impacts at full occupancy (to be confirmed by the applicant).
- Ambient Growth Rate: 1% per year
- Cumulative Projects: Planned and/or approved projects are presented in **Table 6-1**.

**H. General Plan Buildout Traffic:** General Plan Buildout (Year 2045) traffic volume forecasts will be developed based on OCTAM 5.0 approved computer traffic model runs for baseline conditions and buildout conditions for the AM and PM peak periods and daily traffic conditions. Forecast future buildout traffic volumes using the following methodology:

- a. Peak period traffic volumes will be converted to peak hour (i.e., one-hour) traffic volumes using a conversion factor of 0.3566 for the AM peak hour and 0.2662 for the PM peak hour;
- b. Calculate the difference between the baseline and buildout peak period traffic volumes and convert to AM and PM peak hour (i.e., one-hour) link traffic volumes;
- c. Link traffic volumes (i.e., two-way directional traffic volumes on each roadway segment) will be post-processed using the "b-turns" program and the relationship of the base year validation model run output to the



base year "ground" traffic counts to develop buildout AM and PM peak hour traffic volumes.

**I. Analysis Scenarios:** Prepare AM peak hour and PM peak hour Level of Service (LOS) calculations at up to twenty-two (22) study intersections to determine the potential impacts of the proposed Project. The following traffic scenarios will be prepared.

1. Existing Traffic Conditions;
2. Near-Term (Year 2035 to be confirmed) Background Traffic Conditions (Existing plus Ambient Growth plus Related Projects);
3. Near-Term (Year 2035 to be confirmed) Background Plus Project Traffic Conditions;
4. Scenario (3) with improvements to be implemented as conditions of approval (COA), if necessary;
5. General Plan Buildout (Year 2045) Traffic Conditions;
6. General Plan Buildout (Year 2045) Plus Project Traffic Conditions; and
7. Scenario (6) with improvements to be implemented as conditions of approval (COA), if necessary.

**J. LOS Methodology:** The LOS calculations will be based on the HCM 6<sup>th</sup> Edition methodology for both signalized and unsignalized intersections to be consistent with the City of Brea Transportation Impact Analysis (TIA) Guidelines. Additionally, the LOS calculations will also be based on the Intersection Capacity Utilization (ICU) methodology for signalized intersections to be consistent with the City of Brea General Plan.

The HCM calculations will utilize the following parameters:

- Utilization of exiting cycle length and pedestrian timing parameters,
- Minimum left-turn split time, including clearance interval timing = 10 seconds
- Saturation flow rates:
  - Thru and Right-turns = 1,900 vehicles per hour (vph)
  - Left-turns = Single Lane: 1,800 vph, Dual Lanes = 3,500 vph

The ICU calculations will utilize the following parameters:

- Lane capacity of 1,700 vph for through and all turn lanes with a clearance adjustment factor of 0.05

Subject to confirmation by the City Traffic Engineer, the following LOS review criteria will be used to assess the need for potential Project-related improvements in relation to the guidance provided in the City of Brea General Plan:

- HCM Methodology:
  - The Project causes one or more study intersections operating at LOS D or better to degrade to LOS E or F, or
  - The Project causes a change in control delay of 4 seconds for intersections already operating at LOS E, or
  - The Project causes a change in control delay of 2 seconds for intersections already operating at LOS F.
  
- ICU Methodology:
  - The Project causes an intersection operating at LOS D or better to degrade to LOS E or F, or
  - The Project increases traffic demand at a signalized study intersection by 0.020 or greater and the intersection is forecast to operate at LOS E or F.

#### **K. Other Issues:**

- Conduct a traffic signal warrant evaluation of the intersection of the Redbay Avenue at Birch Street, inclusive of existing and future LOS calculations.
- Assess traffic flow at the intersection of N. Associated Road at Birch Street and Voyager Avenue at Birch Street as it relates to traffic operations and congestion associated with Country Hills Elementary School and Olinda Elementary School, inclusive of LOS calculations.
- Perform LOS analysis at the four (4) project access points. At Project Driveway B located along Valencia Avenue, perform a phased LOS analysis both with and without a traffic signal. Conduct a traffic signal warrant evaluation at Project Driveway B.
- Assess the impact of the project access points based on the results of the peak hour intersection analyses and the City's LOS standards. Based on this assessment, determine the improvements which may be required to be implemented by the Project as a Condition of Approval. Recommended improvements may include striping modifications, intersection and/or signalization improvements, inclusive of Automated Traffic Surveillance Control and/or Adaptive Traffic System Control improvements.
- Conduct a queuing evaluation at all key study intersections located along Imperial Highway, inclusive of the SR-57 off-ramps to Imperial Highway and Lambert Road, to address potential Caltrans concerns/comments.
- Perform an active transportation facilities assessment of the near-by roadways as it relates to pedestrian mobility and bicycle mobility.
- Provide documentation of existing near-by transit facilities and transit routes that provide services to the site, as well as document existing bikeway facilities/trails.

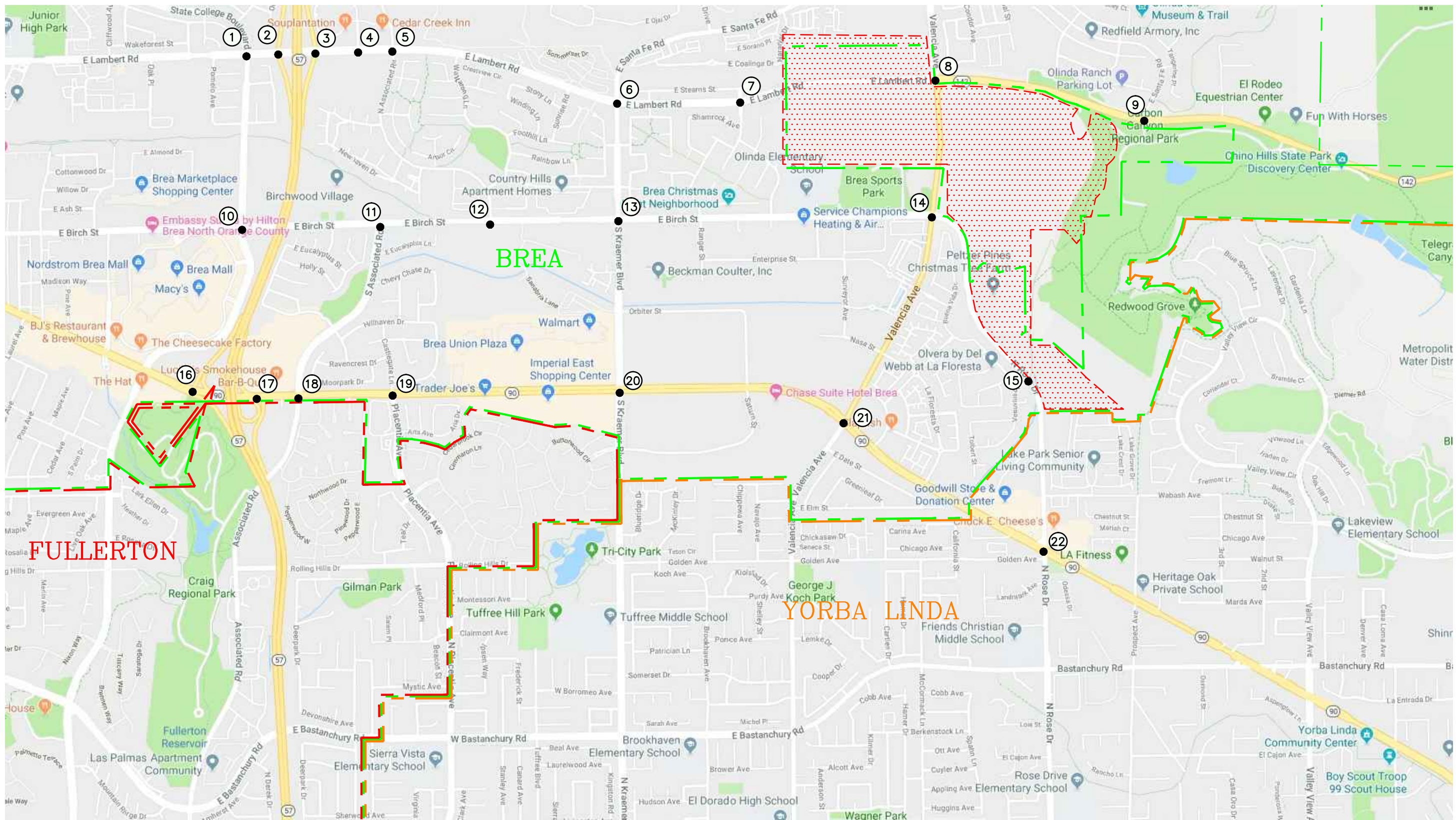


- Prepare a gate queuing study at Project Driveways B and C to identify the distance the gate should be placed to ensure that it does not affect the signal operations along Valencia Avenue and Rose Drive.

\* \* \* \* \*

We appreciate the opportunity to provide this scope of work. Should you have any questions, please call us at (949)825-6175. Thank you.

cc. File  
Shane Green, P.E., LLG



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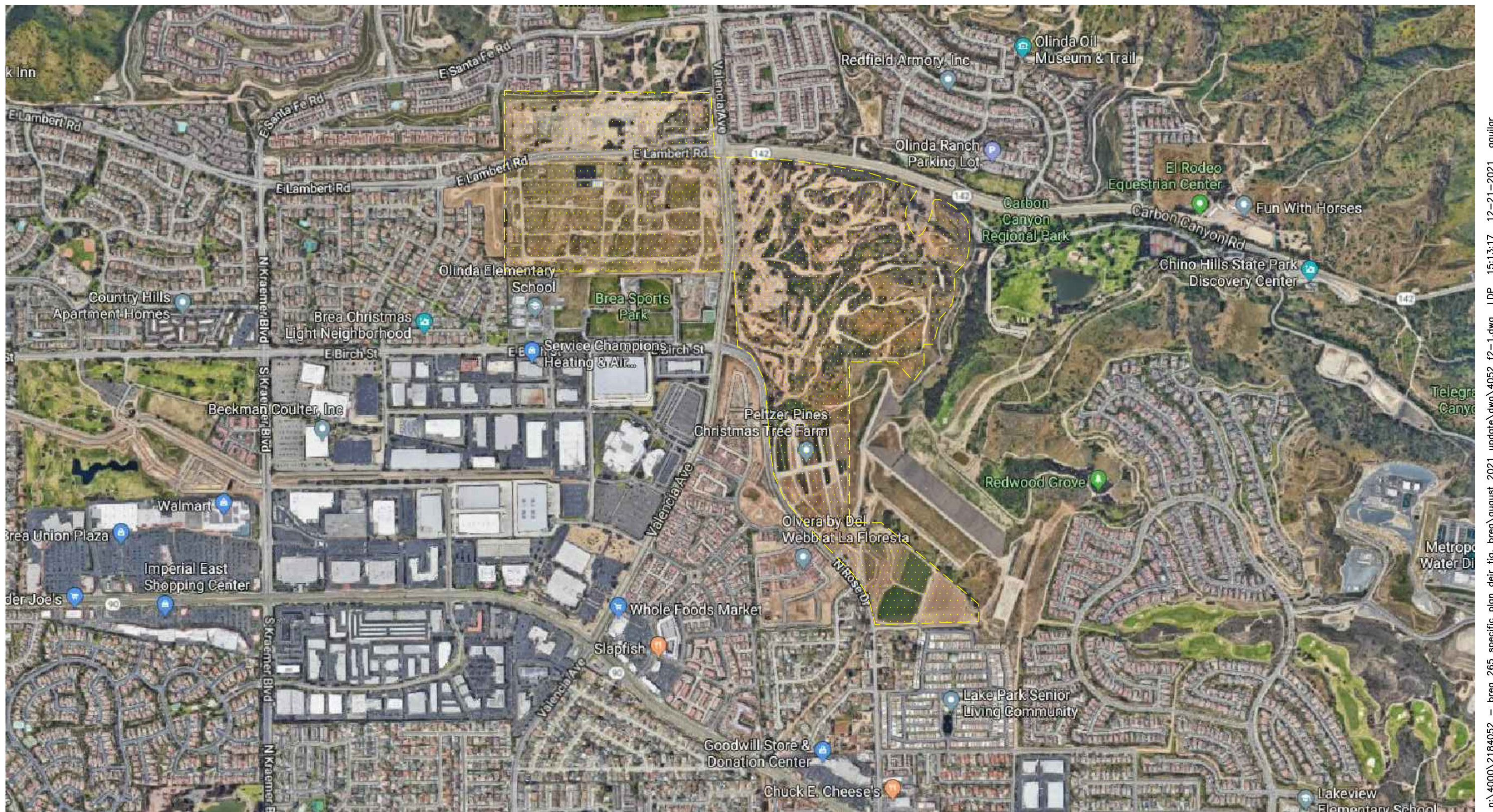
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KEY

- # = STUDY INTERSECTION
- # = ROADWAY SEGMENT
- [Red Dotted Area] = PROJECT SITE

FIGURE 1-1

VICINITY MAP  
BREA 265 SPECIFIC PLAN, BREA



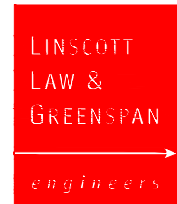
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KEY

 = PROJECT SITE

**FIGURE 2-1**

**EXISTING SITE AERIAL**  
BREA 265 SPECIFIC PLAN, BREA



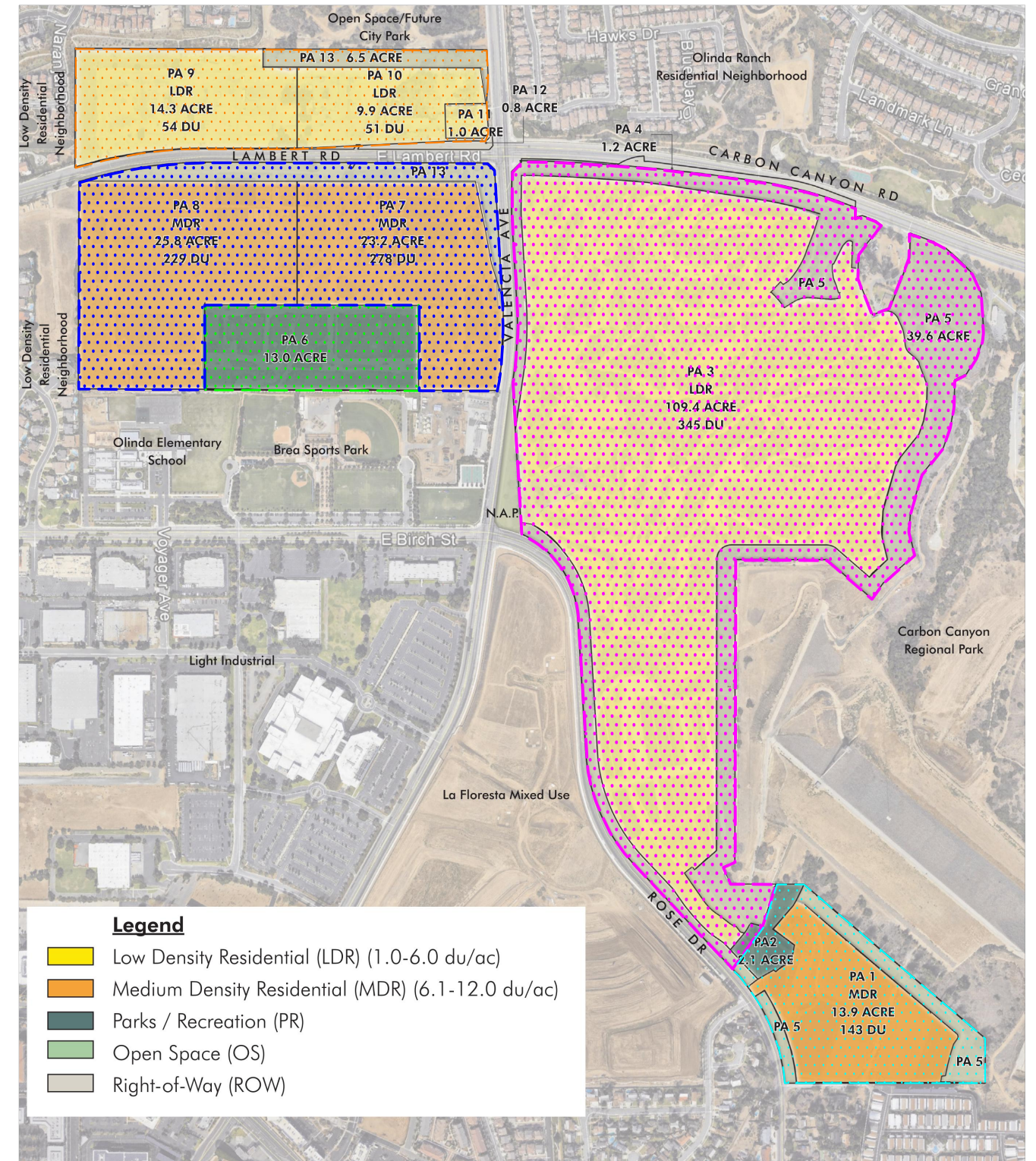
**Table 3-1 Proposed Land Use Summary**

| Land Use                         | Gross Area (Acres) | Density Range (DU/AC) | Dwelling Units     |
|----------------------------------|--------------------|-----------------------|--------------------|
| <b>Residential<sup>1</sup></b>   |                    |                       |                    |
| Low Density Residential (LDR)    | 134.6              | 1.0 – 6.0             | 450                |
| Medium Density Residential (MDR) | 62.9               | 6.1 – 12.0            | 650                |
| Residential Subtotal             | 197.5              |                       | 1,100              |
| <b>Nonresidential</b>            |                    |                       |                    |
| Park/Recreation (PR)             | 15.1               | n/a                   | n/a                |
| Open Space (OS) <sup>2</sup>     | 47.5               | n/a                   | n/a                |
| Master Plan Right-of-Way         | 2.0                | n/a                   | n/a                |
| Nonresidential Subtotal          | 64.6               | n/a                   | n/a                |
| <b>Total</b>                     | <b>262.1 acres</b> | <b>4.2</b>            | <b>1,100 Units</b> |

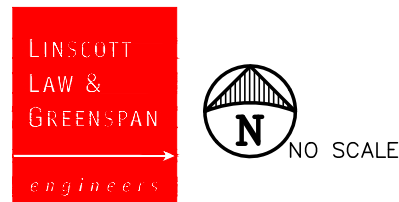
<sup>1</sup> Units may be transferred between density designations and locations.  
<sup>2</sup> Open Space category does not include private open space and recreation areas.

**Table 3-2 Proposed Land Use Category Statistical Summary by Planning Area**

| Planning Area (PA)            | Land Use Category | Gross Area (AC)    | Density Range (DU/AC) <sup>1</sup> | Target Density (DU/AC) <sup>2</sup> | Dwelling Units (DU) <sup>3</sup> |
|-------------------------------|-------------------|--------------------|------------------------------------|-------------------------------------|----------------------------------|
| 1                             | MDR               | 13.9               | 6.1 – 12.0                         | 10.3                                | 143                              |
| 2                             | PR                | 2.1                | n/a                                | n/a                                 | n/a                              |
| 3                             | LDR               | 109.4              | 1.0 – 6.0                          | 3.2                                 | 345                              |
| 4                             | ROW               | 1.2                | n/a                                | n/a                                 | n/a                              |
| 5                             | OS                | 39.6               | n/a                                | n/a                                 | n/a                              |
| 6                             | PR                | 13.0               | n/a                                | n/a                                 | n/a                              |
| 7                             | MDR               | 23.2               | 6.1 – 12.0                         | 12.0                                | 278                              |
| 8                             | MDR               | 25.8               | 6.1 – 12.0                         | 8.9                                 | 229                              |
| 9                             | LDR               | 14.3               | 1.0 – 6.0                          | 3.8                                 | 54                               |
| 10                            | LDR               | 9.9                | 1.0 – 6.0                          | 5.2                                 | 51                               |
| 11                            | LDR               | 1.0                | 1.0 – 6.0                          | n/a                                 | n/a                              |
| 12                            | ROW               | 0.8                | n/a                                | n/a                                 | n/a                              |
| 13                            | OS                | 6.5                | n/a                                | n/a                                 | n/a                              |
| <b>Specific Plan Total</b>    |                   | <b>260.7 acres</b> |                                    | <b>4.2</b>                          | <b>1,100</b>                     |
| Not-a-Part                    | OS                | 1.4                | n/a                                | n/a                                 | n/a                              |
| <b>Proposed Project Total</b> |                   | <b>262.1</b>       | <b>n/a</b>                         | <b>n/a</b>                          | <b>1,100</b>                     |



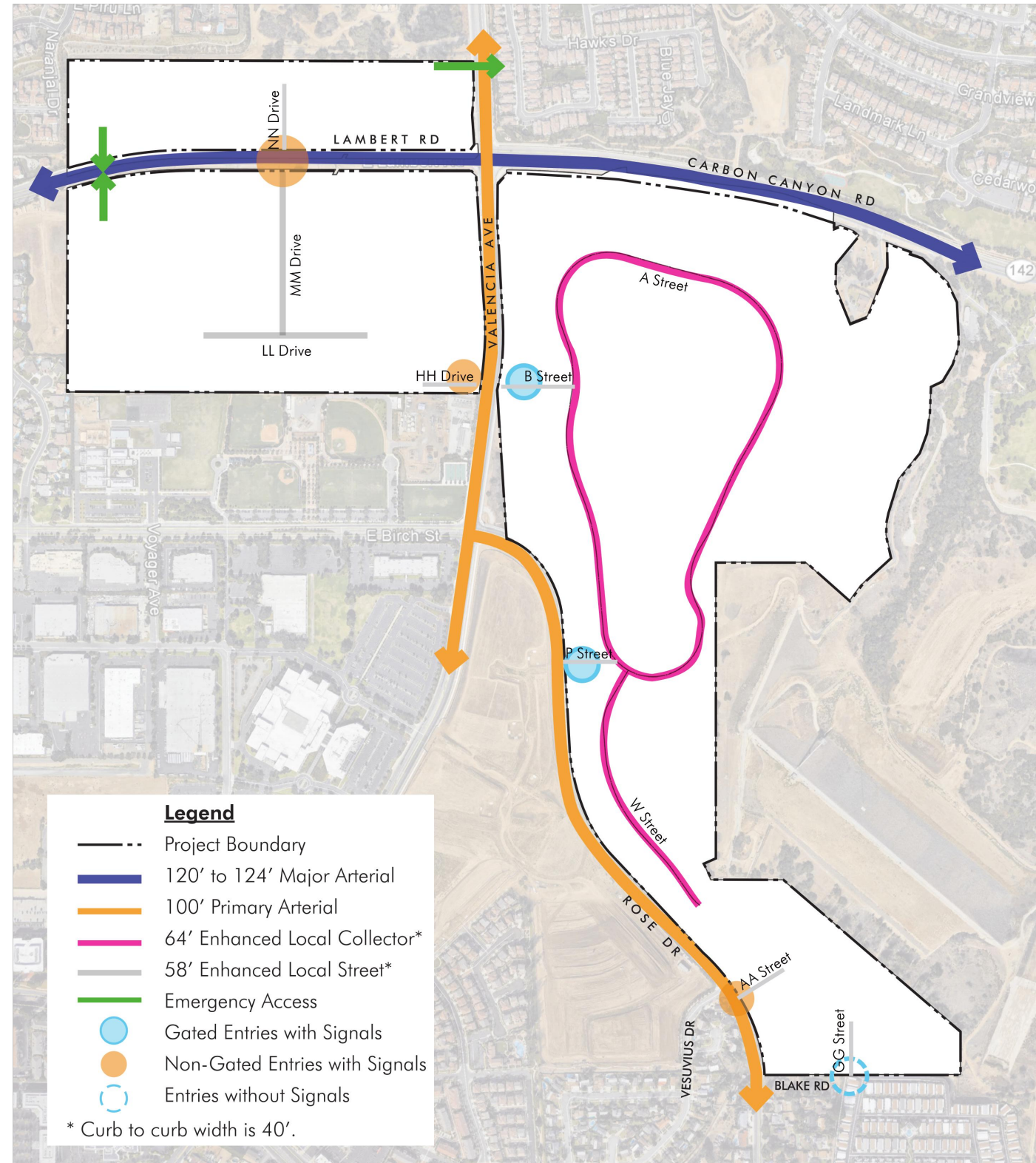
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**FIGURE 2-2**

**PROPOSED SITE PLAN**  
 BRE 265 SPECIFIC PLAN, BRE

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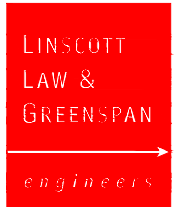






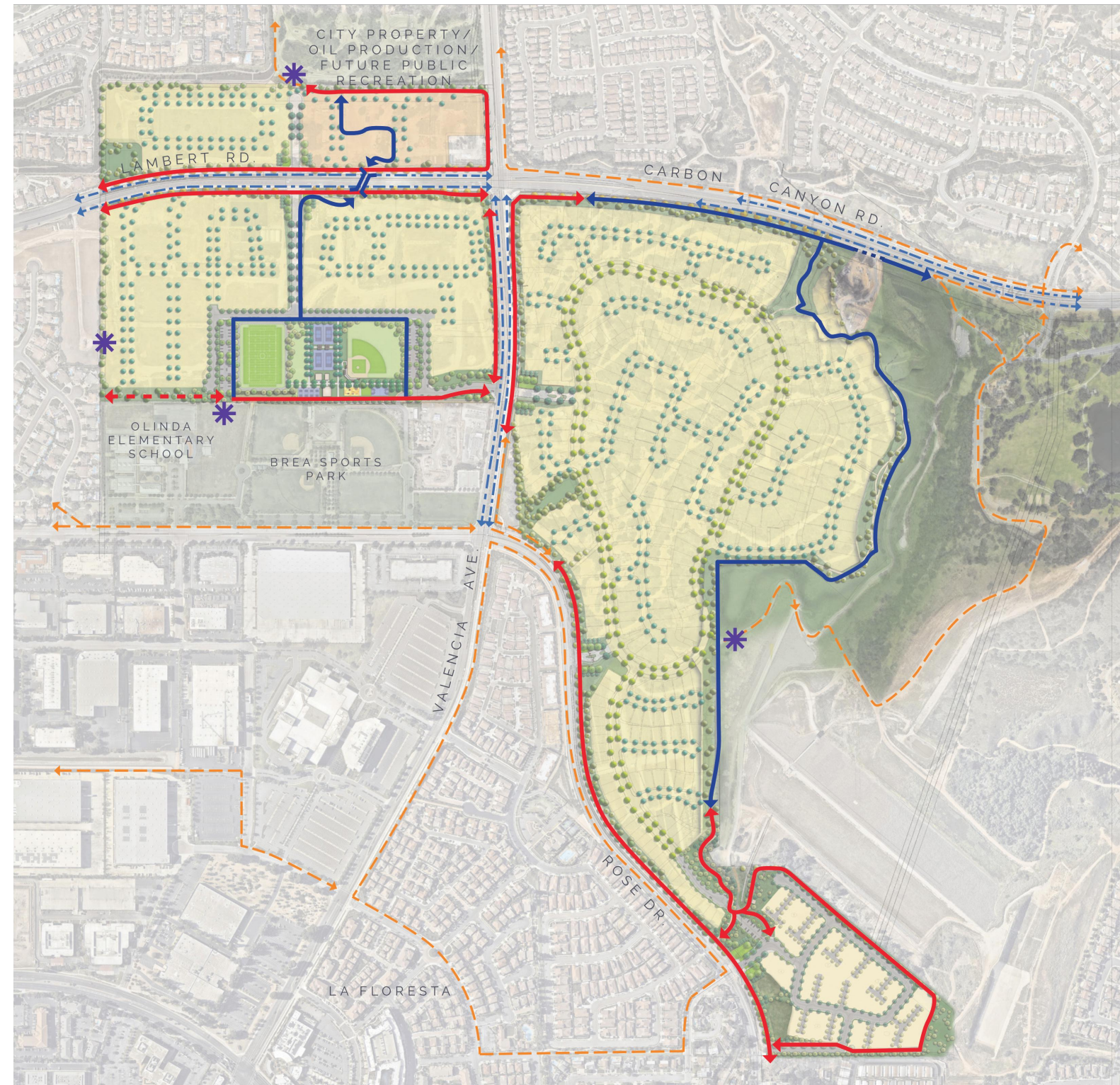


FIGURE 2-3

CIRCULATION PLAN  
BREA 265 SPECIFIC PLAN, BREA

**LEGEND**

- |   |  |  |  |
|---|--|--|--|
| <b>Public Multi-Purpose Trails:</b>   |  |  On-street Bikeway        |  Pedestrian Under Crossing |
|  20' Wide Dual Tread Multi-Purpose Trail<br>10' Asphalt + 10' D.G.           |  Existing Trail                       |  Potential Future Access |  |
|  14' Wide Trail - AC Paving Center Striped<br>10' Asphalt + (x2) 2' Shoulder |  N.A.P- Potential Future Trail Access |  |  |



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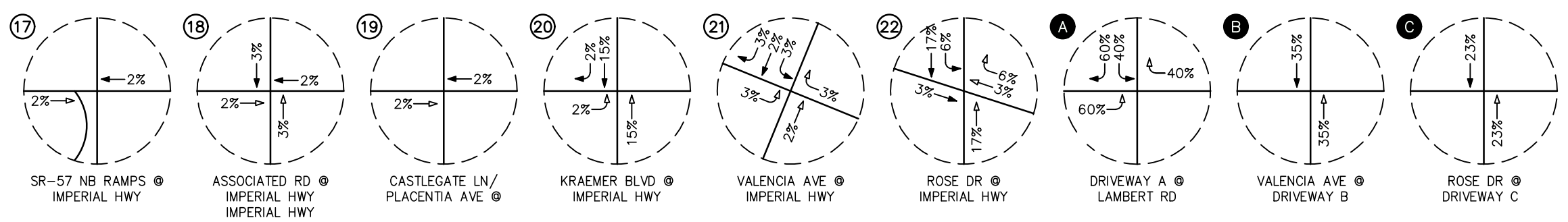
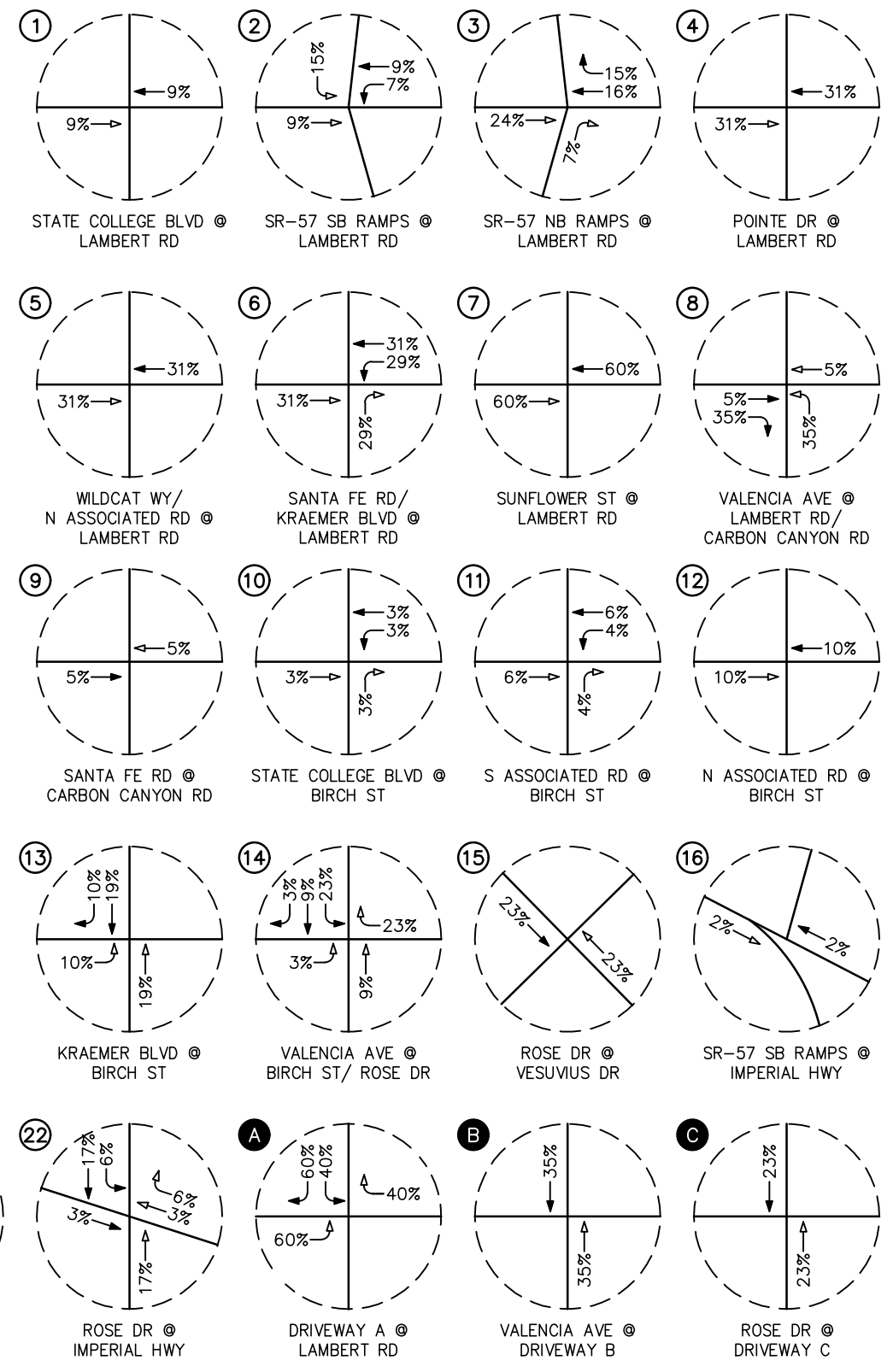
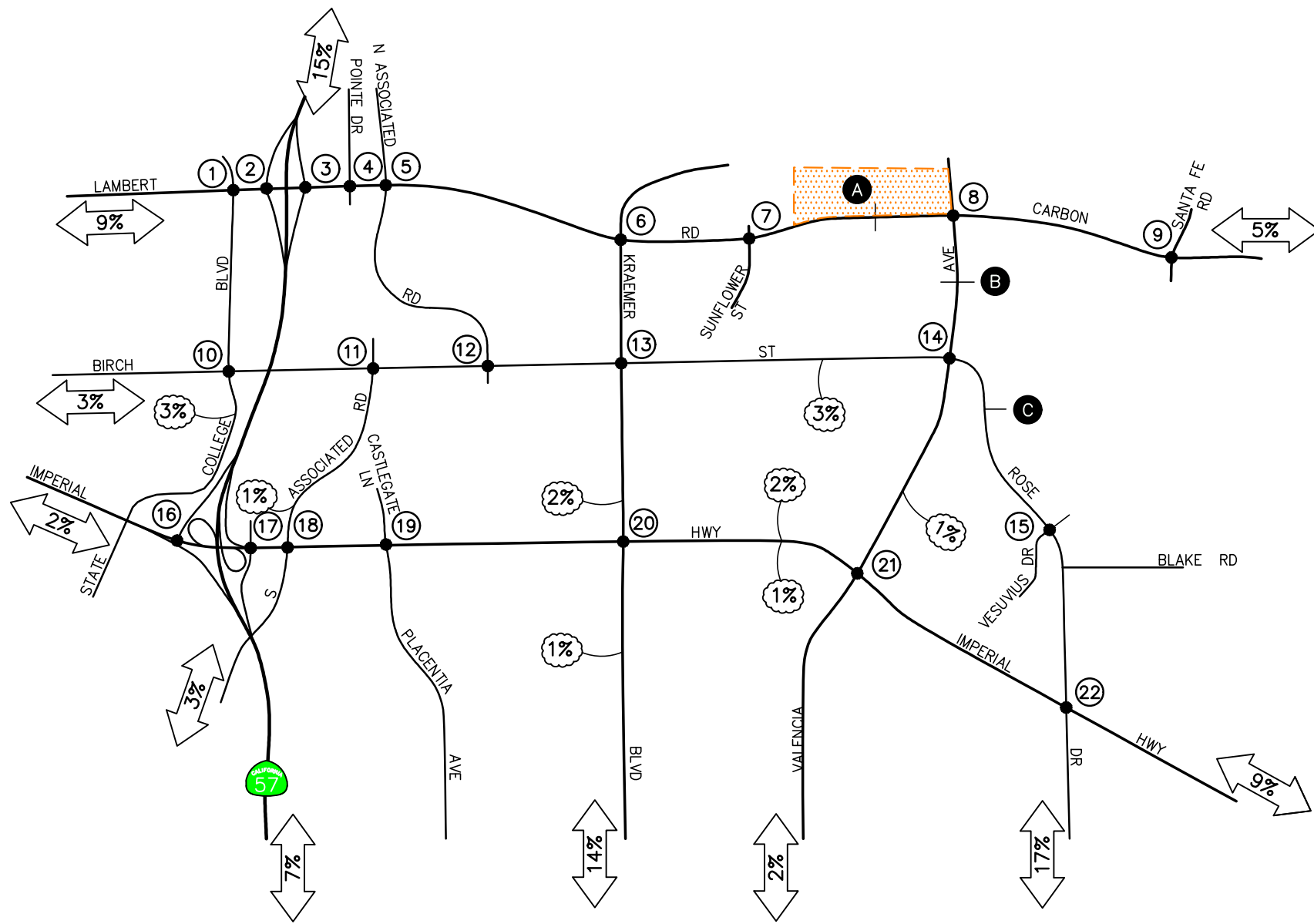
SOURCE: KTG ARCHITECTURE+PLANNING

**FIGURE 2-4**

**NON-VEHICULAR CIRCULATION PLAN**  
BREA 265 SPECIFIC PLAN, BREA

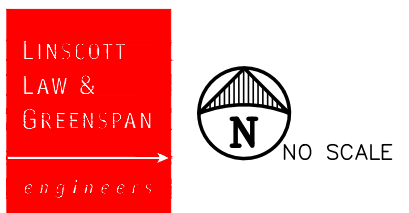






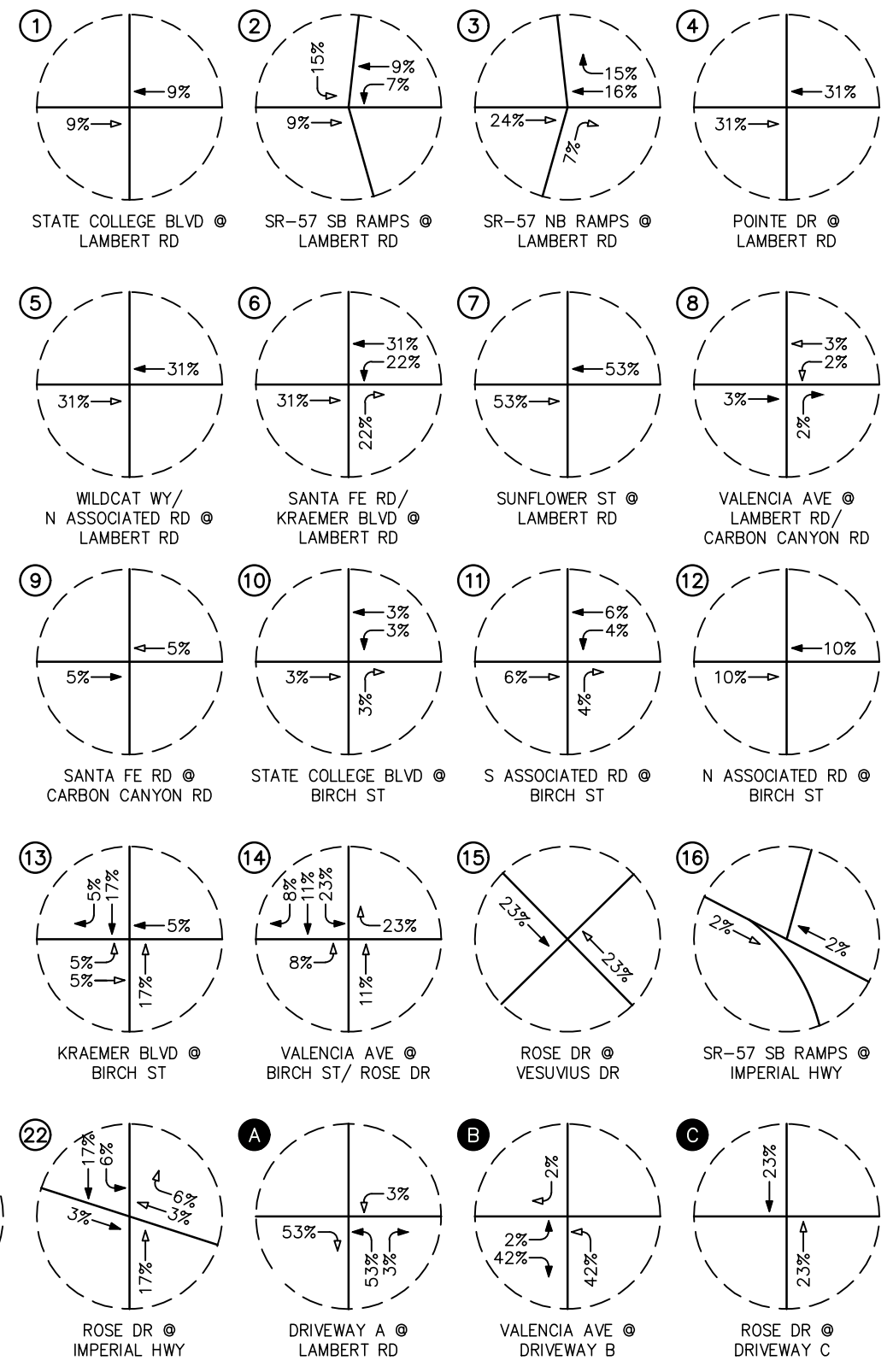
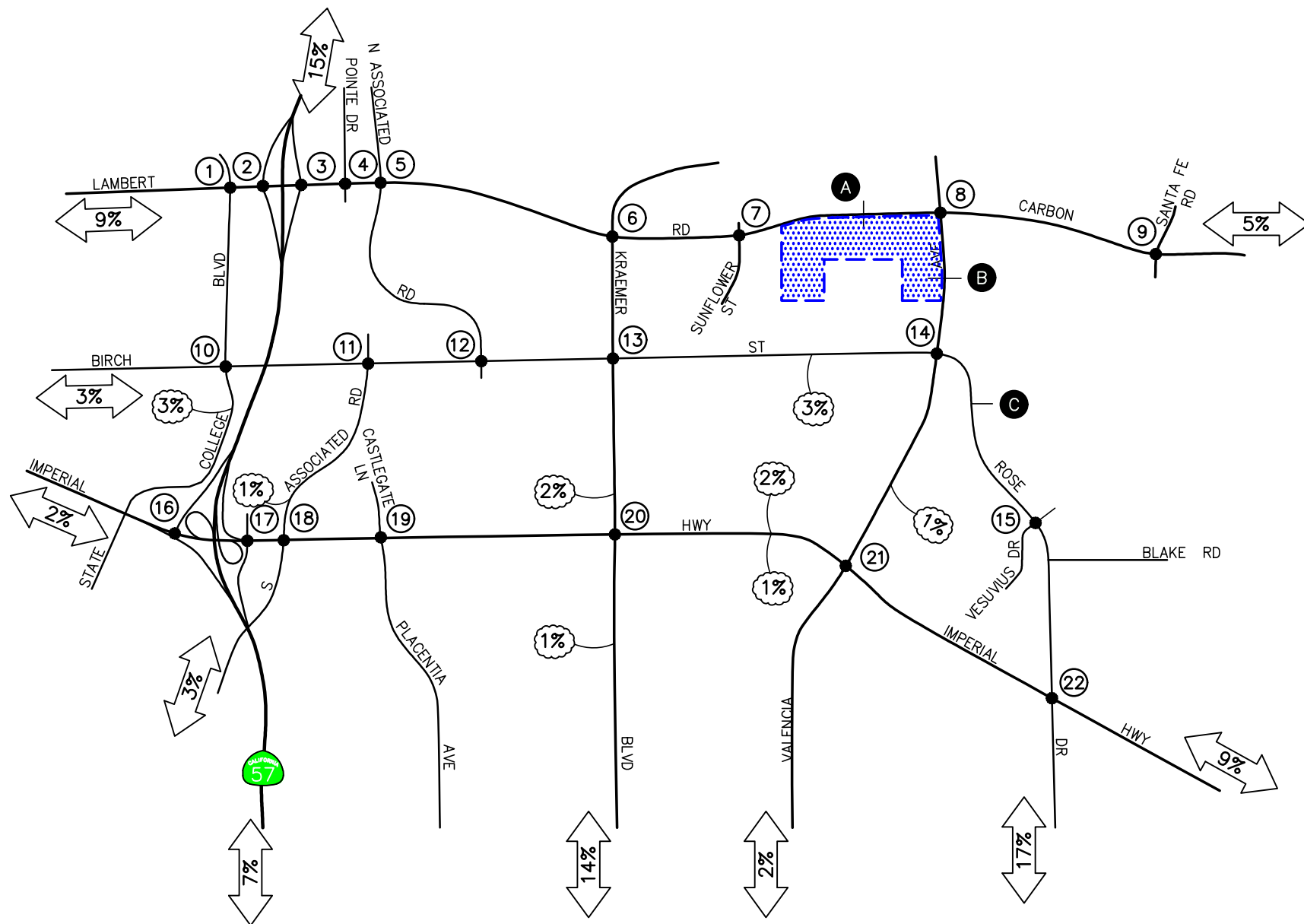
**KEY**

- ⊕ = STUDY INTERSECTION
- ← = INBOUND PERCENTAGE
- = OUTBOUND PERCENTAGE
- ▨ = ZONE 1

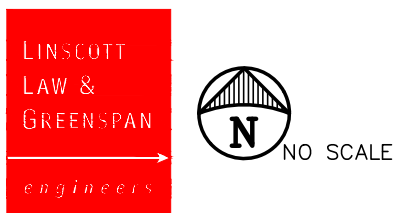


**FIGURE 5-1**  
**PROJECT TRIP DISTRIBUTION PATTERN - ZONE 1**  
 BRE A 265 SPECIFIC PLAN, BRE A

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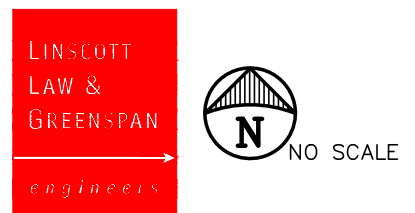
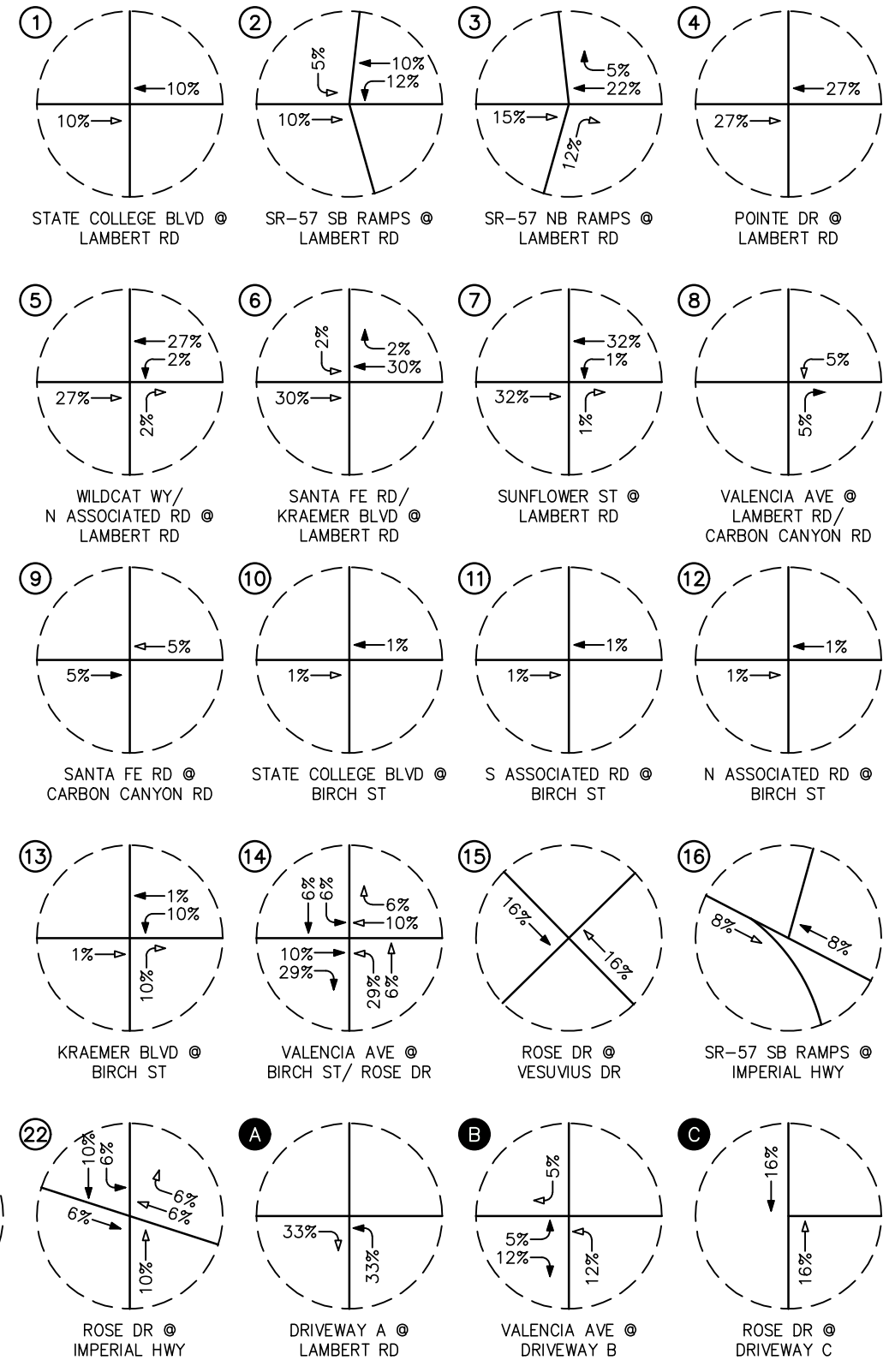
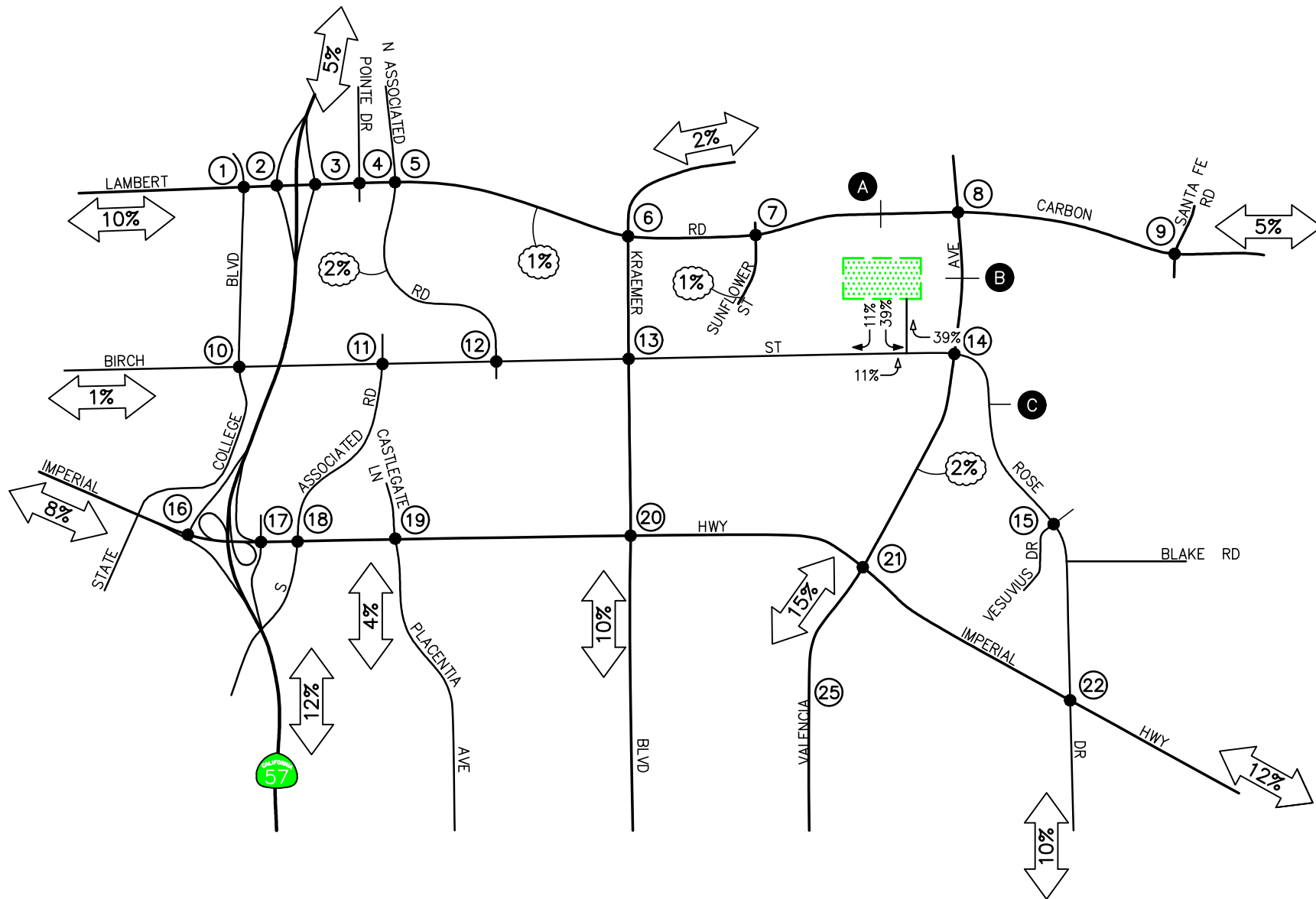


n:\4000\2184052 - brea 265 specific plan deir tia, brea\august 2021 update\dwg\4052 f5-2.dwg LDP 14:30:45 12-21-2021 aguilar



**KEY**  
 # = STUDY INTERSECTION  
 ← = INBOUND PERCENTAGE  
 → = OUTBOUND PERCENTAGE  
 [Hatched Box] = ZONE 2A

**FIGURE 5-2**  
 PROJECT TRIP DISTRIBUTION PATTERN - ZONE 2A  
 BRE A 265 SPECIFIC PLAN, BRE A

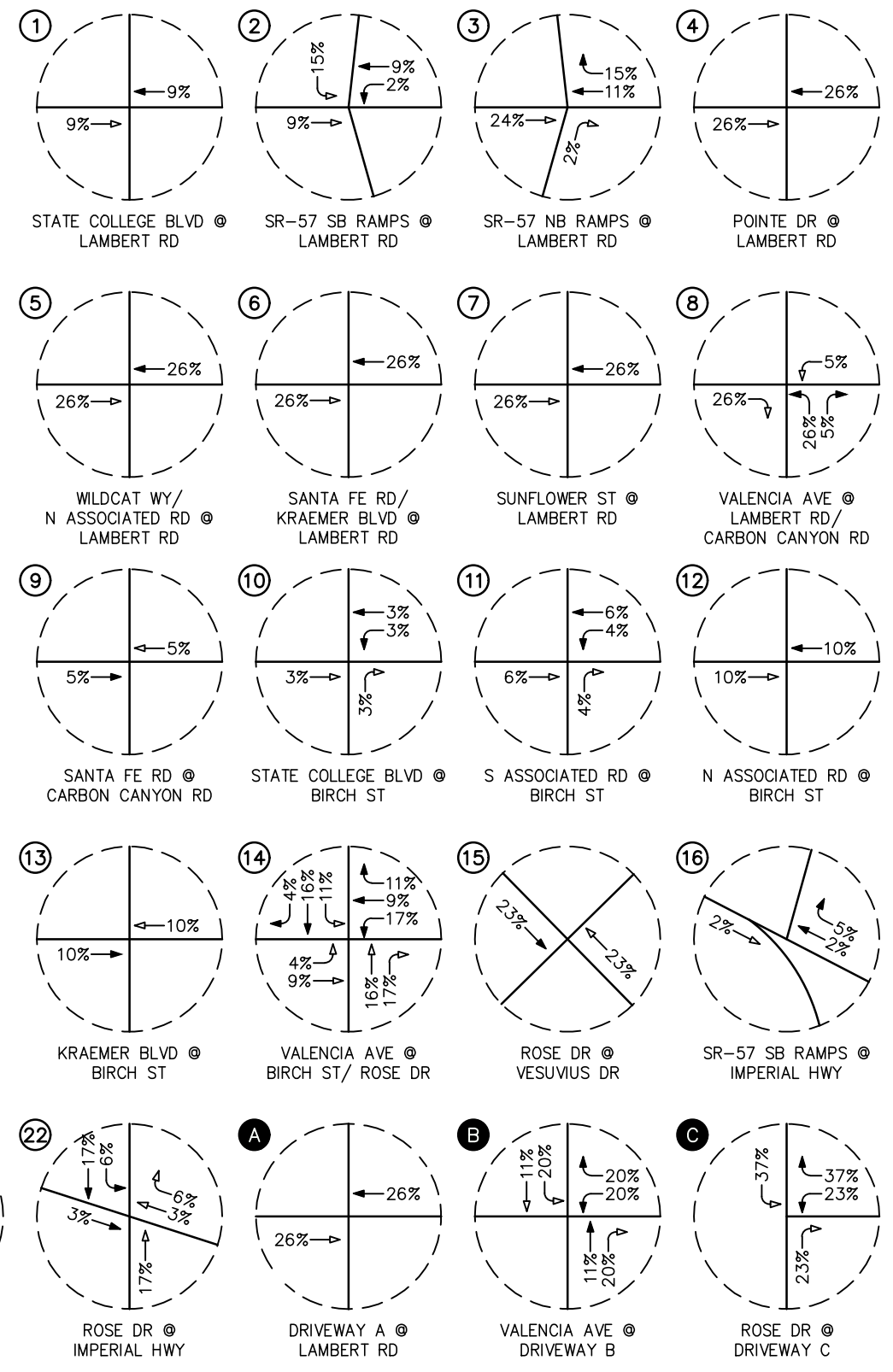
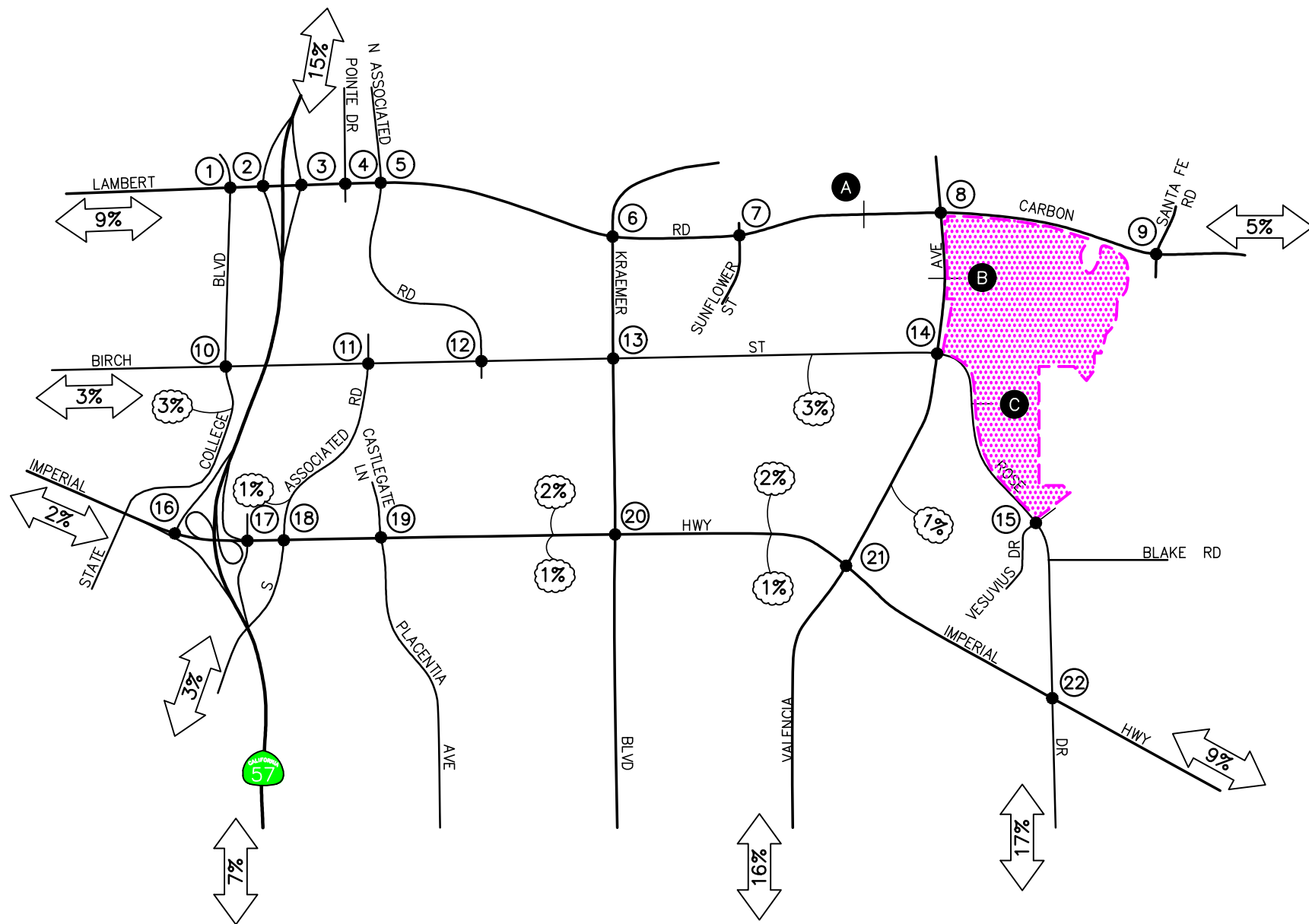


**KEY**

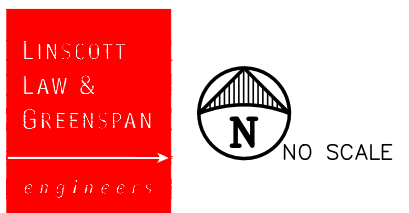
- ⊕ = STUDY INTERSECTION
- ← = INBOUND PERCENTAGE
- = OUTBOUND PERCENTAGE
- ▨ = ZONE 2B

**FIGURE 5-3**  
**PROJECT TRIP DISTRIBUTION PATTERN - ZONE 2B**  
 BRE A 265 SPECIFIC PLAN, BRE A

n:\4000\2184052 - bre a 265 specific plan deir tia, bre a\august 2021 update\dwg\4052 f5-3.dwg LDP 14:31:44 12-21-2021 aguilar



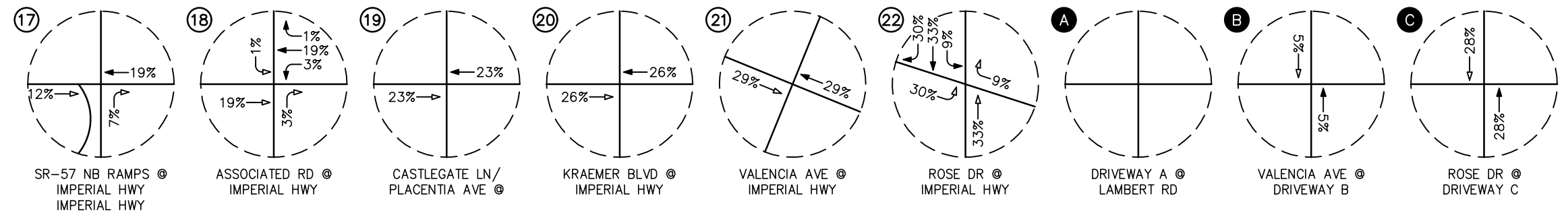
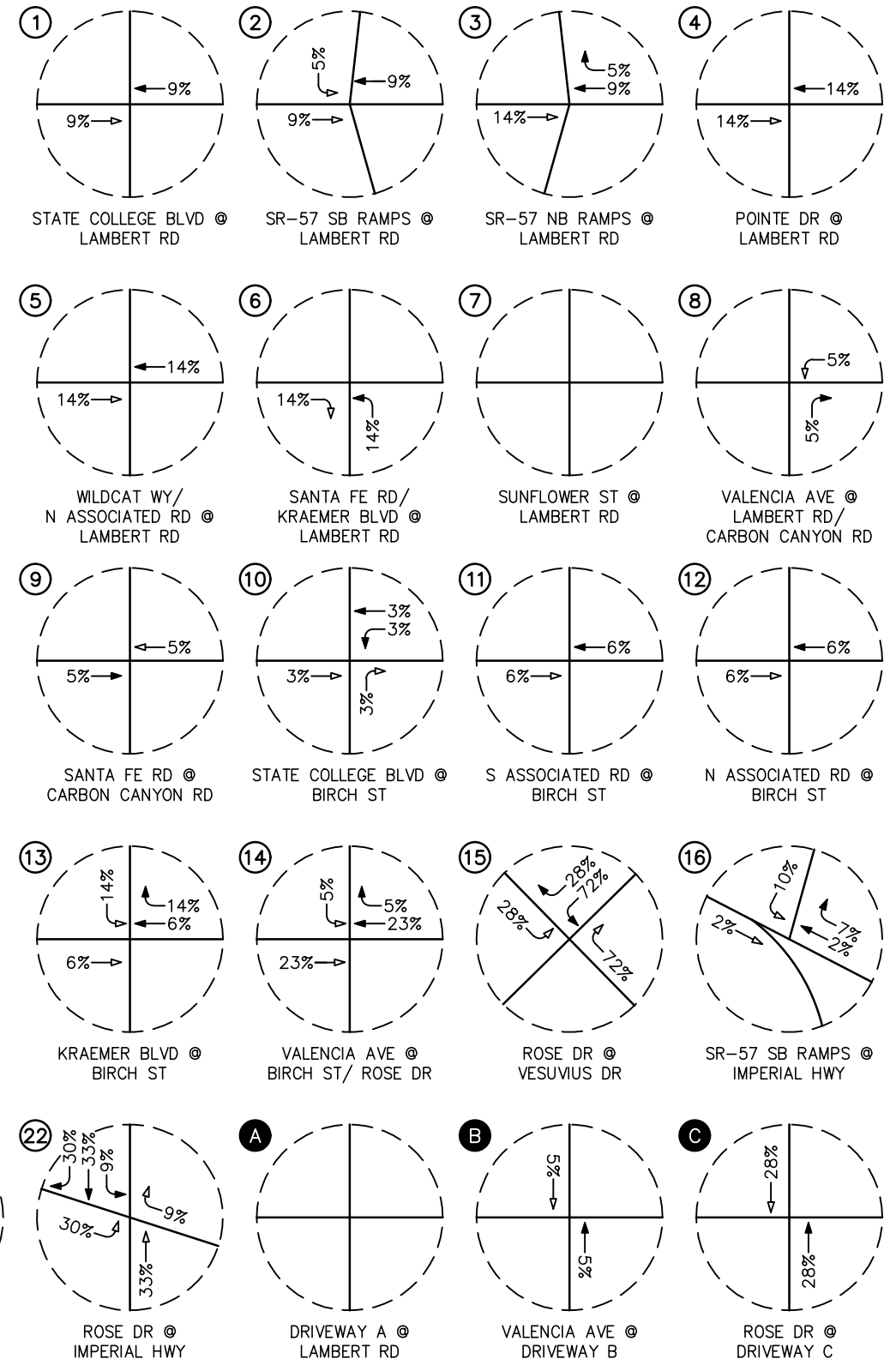
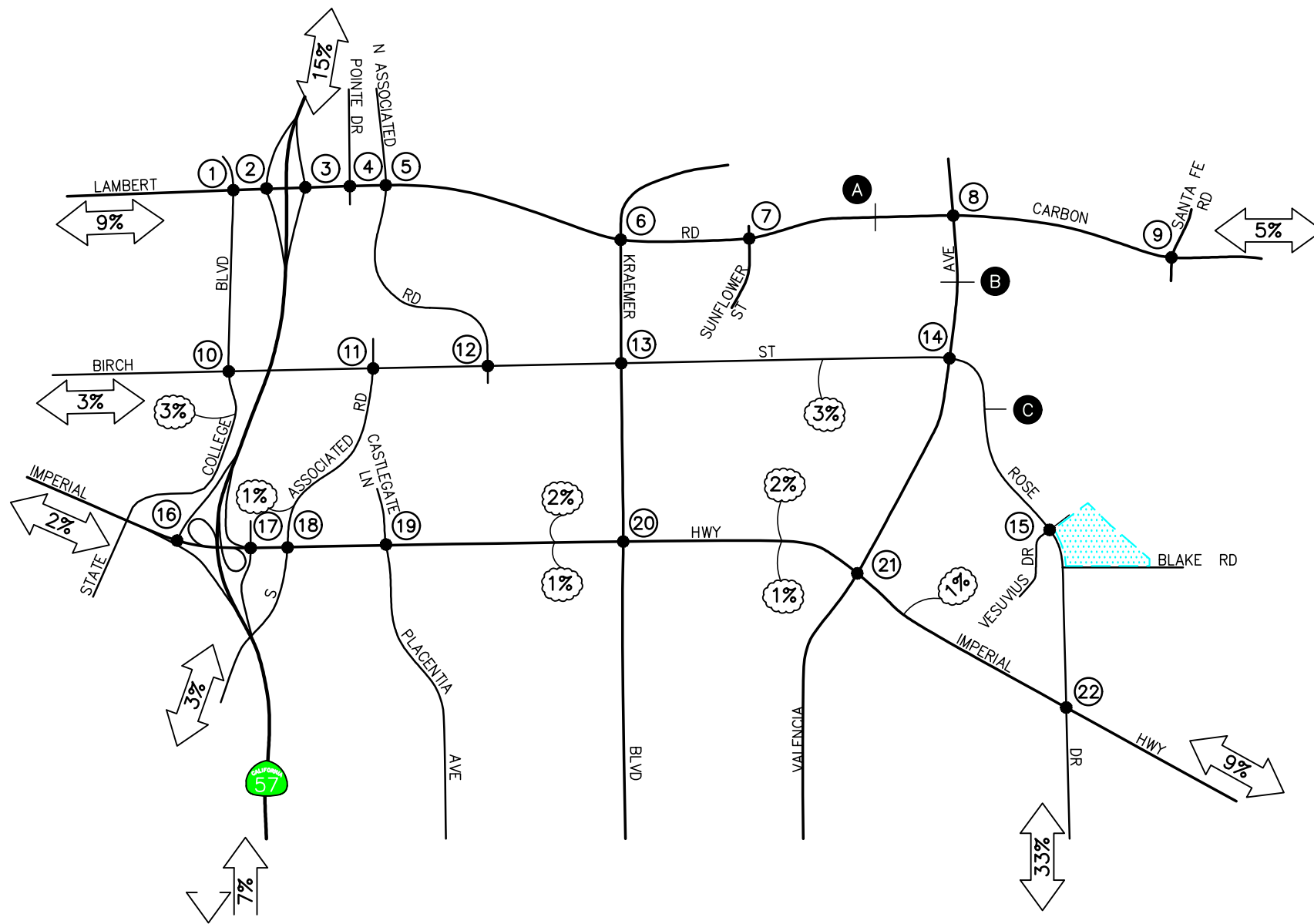
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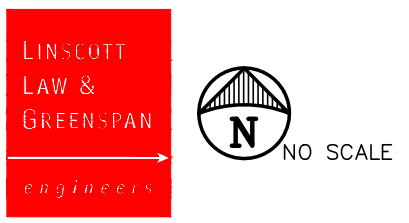
**KEY**

- ⊕ = STUDY INTERSECTION
- ← = INBOUND PERCENTAGE
- = OUTBOUND PERCENTAGE
- █ = ZONE 3A

**FIGURE 5-4**  
**PROJECT TRIP DISTRIBUTION PATTERN - ZONE 3A**  
 BRE A 265 SPECIFIC PLAN, BRE A



n:\4000\2184052 - brea 265 specific plan deir tia, brea\august 2021 update\dwg\4052 f5-5.dwg LDP 15:09:16 12-21-2021 aguilar



**KEY**

- ⊕ = STUDY INTERSECTION
- ← = INBOUND PERCENTAGE
- = OUTBOUND PERCENTAGE
- ▨ = ZONE 3B

**FIGURE 5-5**  
**PROJECT TRIP DISTRIBUTION PATTERN - ZONE 3B**  
 BRE A 265 SPECIFIC PLAN, BRE A

**TABLE 2-1  
PROJECT DEVELOPMENT SUMMARY**

| <b>Land Use/Project Description</b>   | <b>Project Development Totals<br/>No. of Dwelling Units (DU) /<br/>Acres</b> |
|---|--|
| <b><u>Proposed Project Zone 1 (north of Lambert, west of Valencia):</u></b>                             |  |
| ▪ Single Family Detached Residential  | 105 DU   |
| ▪ Public Facility   | <u>1.0 acre</u>  |
| <i>Zone 1 Subtotal</i>  | <i>105 DU</i>  |
| <b><u>Proposed Project Zone 2 (south of Lambert, west of Valencia):</u></b>                             |  |
| ▪ Multifamily /Single Family Attached Residential   | 507 DU   |
| ▪ Sport Park  | <u>13.0 acres<sup>2</sup></u>  |
| <i>Zone 2 Subtotal</i>  | <i>507 DU</i>  |
| <b><u>Proposed Project Zone 3 (south of Carbon Canyon Road, east of Valencia and east of Rose):</u></b> |  |
| ▪ Single Family Detached Residential  | 345 DU   |
| ▪ Multifamily/Single Family Attached Residential  | <u>143 DU</u>  |
| <i>Zone 3 Subtotal</i>  | <i>488 DU</i>  |
| <b>Total Proposed Project</b>   | <b>1,100 Units<br/>13.0 acre Sports Park</b>                                 |

<sup>2</sup> Subject to confirmation, for the Sports Park component of the Project assumed to developed with a combination of a baseball/softball field and multi-purpose field that can be used for football or soccer. Other on-site amenities include a fitness trail, an activities shelter, basketball and tennis courts, and a playground plus pickleball courts, For this analysis, it is assumed up to two (2) full-sized soccer fields will be provided. However, when taking into consideration that a full-sized soccer field can be subdivided into approximately 2-3 child-sized fields, this analysis will conservatively analyze a total of six (6) soccer fields.

**TABLE 5-1  
PRELIMINARY PROJECT TRAFFIC GENERATION RATES AND FORECAST<sup>3</sup>**

| Description   | Daily<br>2-Way | AM Peak Hour |            |            | PM Peak Hour |            |            |
|---|----------------|--------------|------------|------------|--------------|------------|------------|
|   |                | Enter        | Exit       | Total      | Enter        | Exit       | Total      |
| <b><u>Trip Generation Rates:</u></b>                        |                |              |            |            |              |            |            |
| ▪ 210: Single Family Detached Housing (TE/DU)               | 9.43           | 26%          | 74%        | 0.70       | 63%          | 37%        | 0.94       |
| ▪ 215: Single Family Attached Housing (TE/DU)               | 7.20           | 31%          | 69%        | 0.48       | 57%          | 43%        | 0.57       |
| ▪ 220: Multifamily Housing (Low-Rise <sup>4</sup> ) (TE/DU) | 6.74           | 24%          | 76%        | 0.40       | 63%          | 37%        | 0.51       |
| ▪ 488: Soccer Complex (TE/Field) <sup>5</sup>               | 71.33          | 61%          | 39%        | 0.99       | 66%          | 34%        | 16.43      |
| <b><u>Proposed Project Zone 1:</u></b>                      |                |              |            |            |              |            |            |
| ▪ Single Family Homes (105 DU)                              | 990            | 19           | 55         | 74         | 62           | 37         | 99         |
| <b><u>Proposed Project Zone 2:</u></b>                      |                |              |            |            |              |            |            |
| ▪ Multifamily/Single Family Attached (507 DU)               | 3,650          | 75           | 168        | 243        | 165          | 124        | 289        |
| ▪ Sports Park (6 soccer fields)                             | <u>428</u>     | <u>4</u>     | <u>2</u>   | <u>6</u>   | <u>65</u>    | <u>34</u>  | <u>99</u>  |
| <i>Zone 2 Subtotal</i>                                      | <i>4,078</i>   | <i>79</i>    | <i>170</i> | <i>249</i> | <i>230</i>   | <i>158</i> | <i>388</i> |
| <b><u>Proposed Project Zone 3:</u></b>                      |                |              |            |            |              |            |            |
| ▪ Single Family Homes (345 DU)                              | 3,253          | 63           | 179        | 242        | 204          | 120        | 324        |
| ▪ Multifamily/Single Family Attached (143 DU)               | 1,030          | 21           | 48         | 69         | 46           | 36         | 82         |
| <i>Zone 3 Subtotal</i>                                      | <i>4,283</i>   | <i>84</i>    | <i>227</i> | <i>311</i> | <i>250</i>   | <i>156</i> | <i>406</i> |
| <b>Total Proposed Project</b>                               | <b>9,351</b>   | <b>182</b>   | <b>452</b> | <b>634</b> | <b>542</b>   | <b>351</b> | <b>893</b> |

**Notes:**

TE/DU = Trip End per Dwelling Unit

<sup>3</sup> Source: *Trip Generation*, 11<sup>th</sup> Edition, Institute of Transportation Engineers (ITE), Washington, D.C. (2021).

<sup>4</sup> Low-Rise Multifamily Housing consists of buildings that are less than 3 levels. .

<sup>5</sup> A soccer complex is an outdoor facility that is used for non-professional soccer games. It may consist of multiple fields. The size of each field within the land use may vary to accommodate games for different age groups. On-site amenities may include stadium seating, a fitness trail, an activities shelter, aquatic center, picnic grounds, basketball and tennis courts, and a playground.

**TABLE 5-2**  
**PROJECT DIRECTIONAL DISTRIBUTION PATTERN – RESIDENTIAL COMPONENT<sup>6</sup>**

| <b>Distribution Percentage</b> | <b>Orientation/Direction</b> |
|--------------------------------|------------------------------|
| 15%                            | To/from the north            |
| 43%                            | To/from the south            |
| 14%                            | To/from the east             |
| 14%                            | To/from the west             |
| 14%                            | To/from a local destination  |
| <b>100%</b>                    | <b>Total</b>                 |

<sup>6</sup> Residential component of the project includes Zones 1,2A, 3A and 3B.



**TABLE 5-3**  
**PROJECT DIRECTIONAL DISTRIBUTION PATTERN – SPORTS PARK COMPONENT<sup>7</sup>**

| <b>Distribution Percentage</b> | <b>Orientation/Direction</b> |
|--------------------------------|------------------------------|
| 7%                             | To/from the north            |
| 51%                            | To/from the south            |
| 17%                            | To/from the east             |
| 19%                            | To/from the west             |
| 6%                             | To/from a local destination  |
| <b>100%</b>                    | <b>Total</b>                 |

<sup>7</sup> Residential component of the project includes Zone 2B.

**TABLE 6-1  
LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS<sup>8</sup>**

| No.                        | Description                 | Location/Address  | Size  |
|----------------------------|-----------------------------|---|---|
| <b><i>City of Brea</i></b> |                             |   |   |
| 1.                         | CVS                         | 390 N. Brea Boulevard   | 13,000 SF Pharmacy with Drive-Through, 1,700 SF Coffee Shop with Drive-through  |
| 2.                         | Brea Place                  | State College Boulevard at Birch Street                                   | 653 DU Apartments, 5,000 SF Office, 150 Room Hotel <sup>9</sup>   |
| 3.                         | Downtown Hotel              | 220 S. Brea Boulevard   | 116 Room Hotel, 4,000 SF High Turnover Sit Down Restaurant  |
| 4.                         | Mercury Apartments          | Southeast corner of Berry Street at Mercury Lane                          | 120 DU Apartments   |
| 5.                         | Brea Mall Mixed-Use Project | 1065 Brea Mall  | Demolish existing 161,990 SF Sears department store and construct 119,415 SF additional retail space, a 128,000 SF health club, and 383 DU medium density residential units   |
| 6.                         | Brea Plaza                  | 409-477 S. Associated Road and 1555, 1609, 1623, 1643 E. Imperial Highway | Demolition of an existing 18,450 SF movie theater and the construction of a mixed-use development with 21,355 SF of office space and 229 <sup>10</sup> apartment units  |
| 7.                         | Central Park Village        | 340-420 W. Central Avenue   | 62 DU townhomes and 20 DU apartments <sup>11</sup>  |
| 8.                         | New Industrial Building     | 201 N. Berry Street   | 109,125 SF warehouse  |
| 9.                         | Alvero Assisted Living      | 251 S. Randolph Avenue  | 80 rooms with 82 beds residential care facility   |
| 10.                        | Extra Space Self Storage    | 2700 E. Imperial Highway  | 126,546 self-storage facility   |
| 11.                        | Brea Imperial Center        | 391 S. State College Boulevard  | 5,000 SF restaurant, 2,300 SF bagel/coffee shop, 1,600 SF café, 3,867 SF In-N-Out, 28,145 SF retail, and 4,400 SF bank to replace existing land uses which include 4,050 SF food uses, 24,481 SF retail, 4,400 SF bank, 2,325 SF medical office, 10,074 SF health studio spa. |
| 12.                        | Transwestern                | 285 S. Berry Street and 711 W. Imperial Highway                           | 126,797 SF warehouse  |
| 13.                        | The Phoenix Club            | 375 W. Central Avenue   | 8,350 SF restaurant with banquet hall   |
| 14.                        | Aldi Grocery Store          | 2395 E. Imperial Highway  | 21,106 SF grocery store   |
| 15.                        | Starbucks with Drive-Thru   | 2 Pointe Drive  | 2,400 SF coffee shop with drive-thru  |
| 16.                        | Lambert Road Condos         | 700-800 W. Lambert Road   | 24 DU condominiums  |

<sup>8</sup> Source: City of Brea, Fullerton, and Chino Hills Planning Departments.

<sup>9</sup> The traffic impact analysis conservatively evaluated 790 units as originally planned, which would result in higher traffic volumes in the cumulative scenarios.

<sup>10</sup> Fifteen (15) of the proposed apartments are considered co-living units, which include five (5) 3-bedroom units and ten (10) four-bedroom units, therefore, to provide a conservative assessment, the co-living unit bedrooms have been counted as individual units for a total apartment count of 229 units.

<sup>11</sup> The project has already built and occupied 206 DU apartments and 83 DU townhomes.

**TABLE 6-1(CONTINUED)**  
**LOCATION AND DESCRIPTION OF CUMULATIVE PROJECTS<sup>12</sup>**

| No.                                    | Description   | Location/Address   | Size   |
|--|---|--|--|
| <b><u>City of Brea (Continued)</u></b> |   |  |  |
| 17.                                    | Brea Metro Office Condos  | 330 E. Lambert Road  | 33 DU condominiums   |
| 18.                                    | Father's House  | 245 W. Birch Street  | 299 seat religious assembly  |
| 19.                                    | Cha Cha's Expansion   | 110 W. Birch Street  | Existing restaurant expansion of 2,710 SF  |
| 20.                                    | Western Realco  | 2929 E. Imperial Highway   | 131,500 SF industrial building   |
| 21.                                    | CAMP Transformation   | 910 E. Birch Street, Suite 250   | 4,100 SF Fitness Center  |
| 22.                                    | Brea Express Wash   | 300 S. Brea Boulevard  | 4,254 SF express car wash  |
| 23.                                    | Raising Cane's  | 255 E. Imperial Highway  | Demolish existing 9,588 SF office building and construction of a 4,047 SF fast food restaurant with drive-through                          |
| <b><u>City of Fullerton</u></b>        |   |  |  |
| 24.                                    | 3105 Yorba Linda Boulevard  | 3105 Yorba Linda Boulevard   | 4,840 SF drive-through car wash  |
| 25.                                    | Beckman Business Center   | 4300 North Harbor Boulevard  | 522,250 SF Warehousing, 166,185 SF General Light Industrial, 105,880 SF Manufacturing, 42,000 SF Office, and 142,350 SF fulfillment center |
| <b><u>City of Chino Hills</u></b>      |   |  |  |
| 26.                                    | Woodbridge Pacific Group (Canyon Hills/Hillcrest)   | Northwest of Carbon Canyon Road and west of Canyon Hills Road  | 38 DU Single Family Detached   |
| 27.                                    | Stonefield Development  | Northwest of Carbon Canyon Road and east of Fairway Drive  | 28 DU single-family  |
| 28.                                    | Morningfield Estates and Loving Savior of the Hills Lutheran Church and School Master Plan Addendum | South of Morningfield Drive, west of Peyton Drive, north of Chino Hills Parkway, adjacent to San Bernardino County Flood Channel | 7-Lot Subdivision with semi-custom single-family homes, plus 3 classrooms/71 student addition to the Lutheran School                       |
| 29.                                    | Coptic Orthodox Church  | East side of Peyton Drive, north of the Chino Creek Drainage Channel and south of the Chino Valley Community Church property     | 14,695 SF multi-purpose room, 8,645 SF Sanctuary and 555 SF Bookstore  |
| 30.                                    | Buddhist Temple of Chino Hills  | Northeast of Chino Hills Parkway and Rustic Drive  | 23,400 SF Buddhist temple expansion  |
| 31.                                    | Hidden Oaks   | East of Carbon Canyon Road at Canyon Hills Road  | 53 DU Single Family  |
| 32.                                    | Greening Los Serranos Golf Course Project   | 15656 Yorba Avenue   | 124 DU single family, 532 DU multifamily   |
| 33.                                    | Paradise Ranch  | East of Canyon Hills Road and south of Esquilime Drive   | 51 DU single-family  |

<sup>12</sup> Source: City of Brea, Fullerton, and Chino Hills Planning Departments.

**APPENDIX B**  
**EXISTING TRAFFIC COUNT DATA**

*APPENDIX B-1*

**EXISTING INTERSECTION TRAFFIC COUNT DATA**

# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** N State College Blvd & E Lambert Rd  
**City:** Brea  
**Control:** Signalized

**Project ID:** 19-01101-003  
**Date:** 5/22/2019

### Total

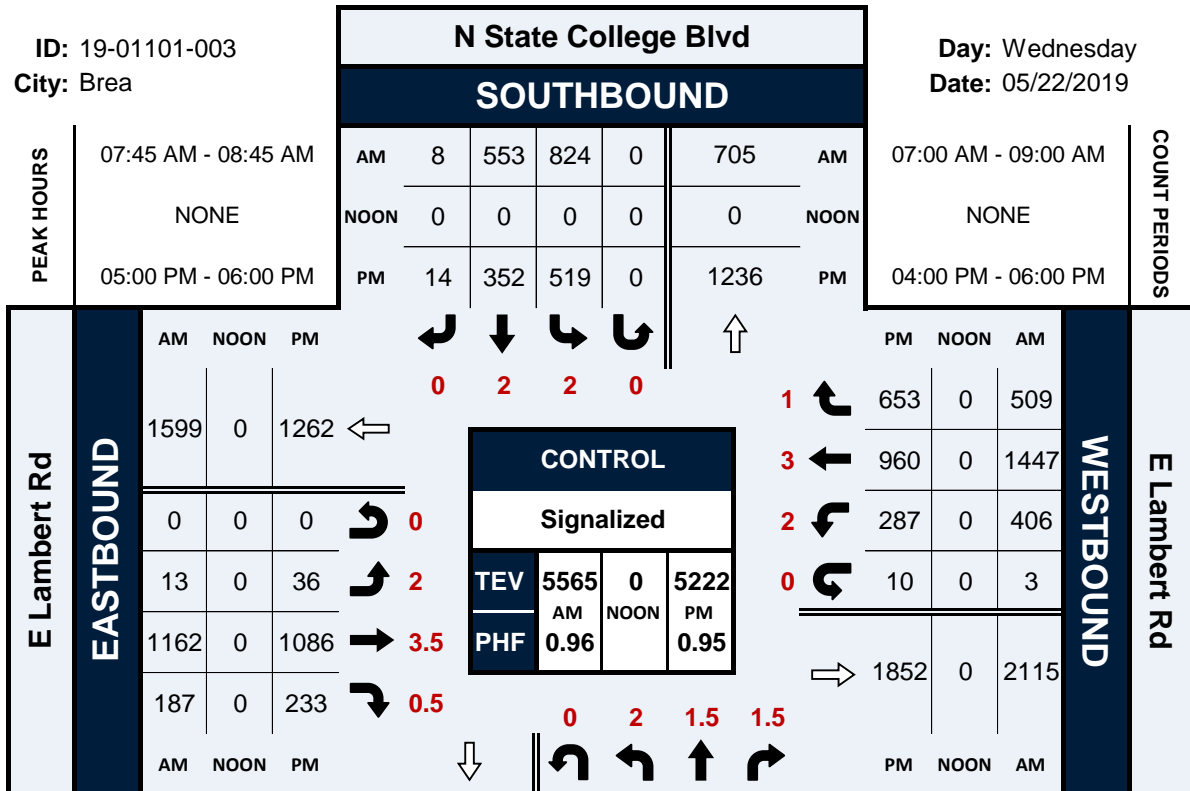
| NS/EW Streets:         | N State College Blvd |        |        |       | N State College Blvd |        |       |       | E Lambert Rd |        |        |       | E Lambert Rd |        |        |       | TOTAL |
|------------------------|----------------------|--------|--------|-------|----------------------|--------|-------|-------|--------------|--------|--------|-------|--------------|--------|--------|-------|-------|
|                        | NORTHBOUND           |        |        |       | SOUTHBOUND           |        |       |       | EASTBOUND    |        |        |       | WESTBOUND    |        |        |       |       |
| AM                     | 2                    | 1.5    | 1.5    | 0     | 2                    | 2      | 0     | 0     | 2            | 3.5    | 0.5    | 0     | 2            | 3      | 1      | 0     |       |
|                        | NL                   | NT     | NR     | NU    | SL                   | ST     | SR    | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    |       |
| 7:00 AM                | 12                   | 28     | 19     | 0     | 131                  | 119    | 0     | 0     | 1            | 228    | 41     | 0     | 79           | 257    | 75     | 0     | 990   |
| 7:15 AM                | 16                   | 22     | 32     | 0     | 158                  | 146    | 0     | 0     | 4            | 235    | 38     | 1     | 102          | 344    | 99     | 1     | 1198  |
| 7:30 AM                | 17                   | 24     | 22     | 0     | 158                  | 144    | 0     | 0     | 0            | 258    | 59     | 0     | 92           | 369    | 114    | 1     | 1258  |
| 7:45 AM                | 32                   | 36     | 29     | 0     | 192                  | 162    | 1     | 0     | 2            | 291    | 64     | 0     | 116          | 391    | 105    | 2     | 1423  |
| 8:00 AM                | 47                   | 47     | 29     | 0     | 210                  | 109    | 3     | 0     | 1            | 272    | 46     | 0     | 102          | 355    | 124    | 1     | 1346  |
| 8:15 AM                | 37                   | 53     | 34     | 0     | 201                  | 148    | 2     | 0     | 3            | 305    | 48     | 0     | 101          | 378    | 141    | 0     | 1451  |
| 8:30 AM                | 28                   | 47     | 34     | 0     | 221                  | 134    | 2     | 0     | 7            | 294    | 29     | 0     | 87           | 323    | 139    | 0     | 1345  |
| 8:45 AM                | 13                   | 21     | 25     | 0     | 183                  | 122    | 1     | 0     | 1            | 262    | 37     | 0     | 118          | 343    | 139    | 0     | 1265  |
| <b>TOTAL VOLUMES:</b>  | NL                   | NT     | NR     | NU    | SL                   | ST     | SR    | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    | TOTAL |
| <b>APPROACH %'s:</b>   | 28.69%               | 39.49% | 31.82% | 0.00% | 57.09%               | 42.56% | 0.35% | 0.00% | 0.75%        | 84.88% | 14.33% | 0.04% | 17.72%       | 61.36% | 20.81% | 0.11% | 10276 |
| <b>PEAK HR:</b>        | 07:45 AM - 08:45 AM  |        |        |       |                      |        |       |       |              |        |        |       |              |        |        |       | TOTAL |
| <b>PEAK HR VOL:</b>    | 144                  | 183    | 126    | 0     | 824                  | 553    | 8     | 0     | 13           | 1162   | 187    | 0     | 406          | 1447   | 509    | 3     | 5565  |
| <b>PEAK HR FACTOR:</b> | 0.766                | 0.863  | 0.926  | 0.000 | 0.932                | 0.853  | 0.667 | 0.000 | 0.464        | 0.952  | 0.730  | 0.000 | 0.875        | 0.925  | 0.902  | 0.375 | 0.959 |
|                        | 0.913                |        |        |       | 0.970                |        |       |       | 0.954        |        |        |       | 0.954        |        |        |       |       |
| PM                     | 2                    | 1.5    | 1.5    | 0     | 2                    | 2      | 0     | 0     | 2            | 3.5    | 0.5    | 0     | 2            | 3      | 1      | 0     |       |
|                        | NL                   | NT     | NR     | NU    | SL                   | ST     | SR    | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    |       |
| 4:00 PM                | 62                   | 117    | 64     | 0     | 108                  | 65     | 0     | 0     | 2            | 307    | 34     | 2     | 56           | 270    | 213    | 4     | 1304  |
| 4:15 PM                | 59                   | 152    | 67     | 0     | 115                  | 57     | 3     | 0     | 2            | 278    | 48     | 1     | 58           | 279    | 180    | 7     | 1306  |
| 4:30 PM                | 66                   | 123    | 74     | 0     | 131                  | 67     | 0     | 0     | 1            | 264    | 53     | 0     | 71           | 297    | 178    | 4     | 1329  |
| 4:45 PM                | 75                   | 162    | 44     | 0     | 110                  | 84     | 3     | 0     | 6            | 196    | 52     | 0     | 68           | 298    | 170    | 0     | 1268  |
| 5:00 PM                | 55                   | 142    | 49     | 0     | 114                  | 82     | 3     | 0     | 14           | 198    | 58     | 0     | 83           | 231    | 154    | 5     | 1188  |
| 5:15 PM                | 84                   | 131    | 50     | 0     | 148                  | 89     | 3     | 0     | 11           | 334    | 60     | 0     | 60           | 243    | 158    | 3     | 1374  |
| 5:30 PM                | 71                   | 141    | 66     | 0     | 122                  | 87     | 4     | 0     | 5            | 312    | 64     | 0     | 78           | 241    | 163    | 1     | 1355  |
| 5:45 PM                | 78                   | 133    | 72     | 0     | 135                  | 94     | 4     | 0     | 6            | 242    | 51     | 0     | 66           | 245    | 178    | 1     | 1305  |
| <b>TOTAL VOLUMES:</b>  | NL                   | NT     | NR     | NU    | SL                   | ST     | SR    | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    | TOTAL |
| <b>APPROACH %'s:</b>   | 25.74%               | 51.52% | 22.74% | 0.00% | 60.38%               | 38.39% | 1.23% | 0.00% | 1.81%        | 81.93% | 16.15% | 0.12% | 13.29%       | 51.78% | 34.31% | 0.62% | 10429 |
| <b>PEAK HR:</b>        | 05:00 PM - 06:00 PM  |        |        |       |                      |        |       |       |              |        |        |       |              |        |        |       | TOTAL |
| <b>PEAK HR VOL:</b>    | 288                  | 547    | 237    | 0     | 519                  | 352    | 14    | 0     | 36           | 1086   | 233    | 0     | 287          | 960    | 653    | 10    | 5222  |
| <b>PEAK HR FACTOR:</b> | 0.857                | 0.963  | 0.823  | 0.000 | 0.877                | 0.936  | 0.875 | 0.000 | 0.643        | 0.813  | 0.910  | 0.000 | 0.864        | 0.980  | 0.917  | 0.500 | 0.950 |
|                        | 0.947                |        |        |       | 0.922                |        |       |       | 0.836        |        |        |       | 0.974        |        |        |       |       |

# N State College Blvd & E Lambert Rd

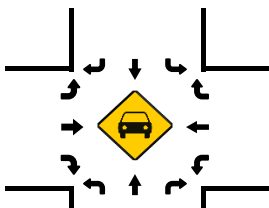
## Peak Hour Turning Movement Count

ID: 19-01101-003  
City: Brea

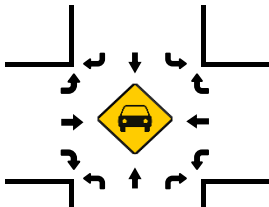
Day: Wednesday  
Date: 05/22/2019



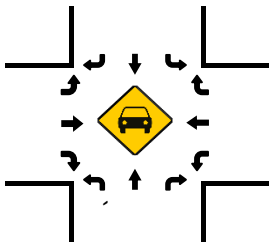
Total Vehicles (AM)



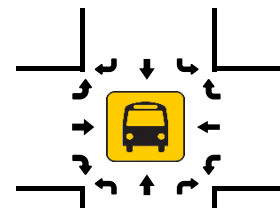
Total Vehicles (NOON)



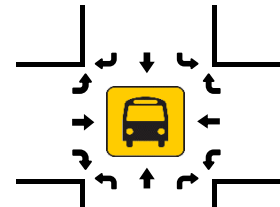
Total Vehicles (PM)



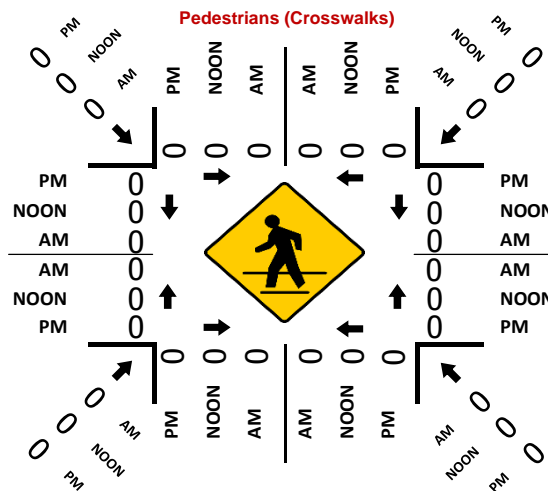
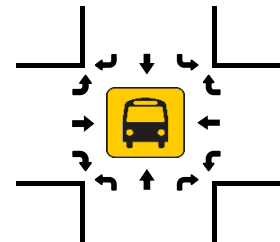
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** SR-57 SB Ramps & E Lambert Rd  
**City:** Brea  
**Control:** Signalized

**Project ID:** 19-01101-004  
**Date:** 5/22/2019

### Total

| NS/EW Streets:          | SR-57 SB Ramps      |       |       |       | SR-57 SB Ramps |       |        |       | E Lambert Rd |        |        |       | E Lambert Rd |        |       |       | TOTAL |
|-------------------------|---------------------|-------|-------|-------|----------------|-------|--------|-------|--------------|--------|--------|-------|--------------|--------|-------|-------|-------|
|                         | NORTHBOUND          |       |       |       | SOUTHBOUND     |       |        |       | EASTBOUND    |        |        |       | WESTBOUND    |        |       |       |       |
| AM                      | NL                  | NT    | NR    | NU    | SL             | ST    | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR    | WU    |       |
| 7:00 AM                 | 0                   | 0     | 0     | 0     | 230            | 1     | 125    | 0     | 0            | 241    | 132    | 0     | 33           | 308    | 0     | 0     | 1070  |
| 7:15 AM                 | 0                   | 0     | 0     | 0     | 267            | 0     | 149    | 0     | 0            | 312    | 128    | 0     | 36           | 385    | 0     | 0     | 1277  |
| 7:30 AM                 | 0                   | 0     | 0     | 0     | 270            | 0     | 150    | 0     | 0            | 296    | 129    | 0     | 58           | 413    | 0     | 0     | 1316  |
| 7:45 AM                 | 0                   | 0     | 0     | 0     | 288            | 0     | 136    | 0     | 0            | 375    | 126    | 0     | 38           | 485    | 0     | 1     | 1449  |
| 8:00 AM                 | 0                   | 0     | 0     | 0     | 223            | 0     | 116    | 0     | 0            | 404    | 120    | 0     | 53           | 476    | 0     | 1     | 1393  |
| 8:15 AM                 | 0                   | 0     | 0     | 0     | 257            | 0     | 121    | 0     | 0            | 397    | 132    | 0     | 59           | 522    | 0     | 0     | 1488  |
| 8:30 AM                 | 0                   | 0     | 0     | 0     | 209            | 1     | 115    | 0     | 0            | 403    | 160    | 0     | 54           | 446    | 0     | 1     | 1389  |
| 8:45 AM                 | 0                   | 0     | 0     | 0     | 235            | 0     | 149    | 0     | 0            | 345    | 136    | 0     | 64           | 458    | 0     | 1     | 1388  |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT    | NR    | NU    | SL             | ST    | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR    | WU    | TOTAL |
| <b>APPROACH %'s :</b>   | 0                   | 0     | 0     | 0     | 1979           | 2     | 1061   | 0     | 0            | 2773   | 1063   | 0     | 395          | 3493   | 0     | 4     | 10770 |
|                         |                     |       |       |       | 65.06%         | 0.07% | 34.88% | 0.00% | 0.00%        | 72.29% | 27.71% | 0.00% | 10.15%       | 89.75% | 0.00% | 0.10% |       |
| <b>PEAK HR :</b>        | 07:45 AM - 08:45 AM |       |       |       |                |       |        |       |              |        |        |       |              |        |       |       | TOTAL |
| <b>PEAK HR VOL :</b>    | 0                   | 0     | 0     | 0     | 977            | 1     | 488    | 0     | 0            | 1579   | 538    | 0     | 204          | 1929   | 0     | 3     | 5719  |
| <b>PEAK HR FACTOR :</b> | 0.000               | 0.000 | 0.000 | 0.000 | 0.848          | 0.250 | 0.897  | 0.000 | 0.000        | 0.977  | 0.841  | 0.000 | 0.864        | 0.924  | 0.000 | 0.750 | 0.961 |
|                         |                     |       |       |       |                | 0.864 |        |       |              | 0.940  |        |       |              | 0.919  |       |       |       |
| PM                      | NL                  | NT    | NR    | NU    | SL             | ST    | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR    | WU    | TOTAL |
| 4:00 PM                 | 0                   | 0     | 0     | 0     | 116            | 1     | 143    | 0     | 0            | 292    | 209    | 0     | 52           | 391    | 0     | 1     | 1205  |
| 4:15 PM                 | 0                   | 0     | 0     | 0     | 114            | 1     | 172    | 0     | 0            | 301    | 151    | 0     | 45           | 362    | 0     | 2     | 1148  |
| 4:30 PM                 | 0                   | 0     | 0     | 0     | 92             | 1     | 183    | 0     | 0            | 256    | 195    | 0     | 63           | 372    | 0     | 0     | 1162  |
| 4:45 PM                 | 0                   | 0     | 0     | 0     | 100            | 1     | 164    | 0     | 0            | 209    | 155    | 0     | 52           | 406    | 0     | 0     | 1087  |
| 5:00 PM                 | 0                   | 0     | 0     | 0     | 100            | 6     | 165    | 0     | 0            | 172    | 185    | 0     | 85           | 292    | 0     | 0     | 1005  |
| 5:15 PM                 | 0                   | 0     | 0     | 0     | 150            | 2     | 149    | 0     | 0            | 359    | 200    | 0     | 70           | 322    | 0     | 1     | 1253  |
| 5:30 PM                 | 0                   | 0     | 0     | 0     | 144            | 1     | 168    | 0     | 0            | 322    | 172    | 0     | 55           | 325    | 0     | 0     | 1187  |
| 5:45 PM                 | 0                   | 0     | 0     | 0     | 98             | 0     | 151    | 0     | 0            | 314    | 148    | 0     | 60           | 358    | 0     | 0     | 1129  |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT    | NR    | NU    | SL             | ST    | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR    | WU    | TOTAL |
| <b>APPROACH %'s :</b>   | 0                   | 0     | 0     | 0     | 914            | 13    | 1295   | 0     | 0            | 2225   | 1415   | 0     | 482          | 2828   | 0     | 4     | 9176  |
|                         |                     |       |       |       | 41.13%         | 0.59% | 58.28% | 0.00% | 0.00%        | 61.13% | 38.87% | 0.00% | 14.54%       | 85.33% | 0.00% | 0.12% |       |
| <b>PEAK HR :</b>        | 04:00 PM - 05:00 PM |       |       |       |                |       |        |       |              |        |        |       |              |        |       |       | TOTAL |
| <b>PEAK HR VOL :</b>    | 0                   | 0     | 0     | 0     | 422            | 4     | 662    | 0     | 0            | 1058   | 710    | 0     | 212          | 1531   | 0     | 3     | 4602  |
| <b>PEAK HR FACTOR :</b> | 0.000               | 0.000 | 0.000 | 0.000 | 0.909          | 1.000 | 0.904  | 0.000 | 0.000        | 0.879  | 0.849  | 0.000 | 0.841        | 0.943  | 0.000 | 0.375 | 0.955 |
|                         |                     |       |       |       |                | 0.948 |        |       |              | 0.882  |        |       |              | 0.953  |       |       |       |

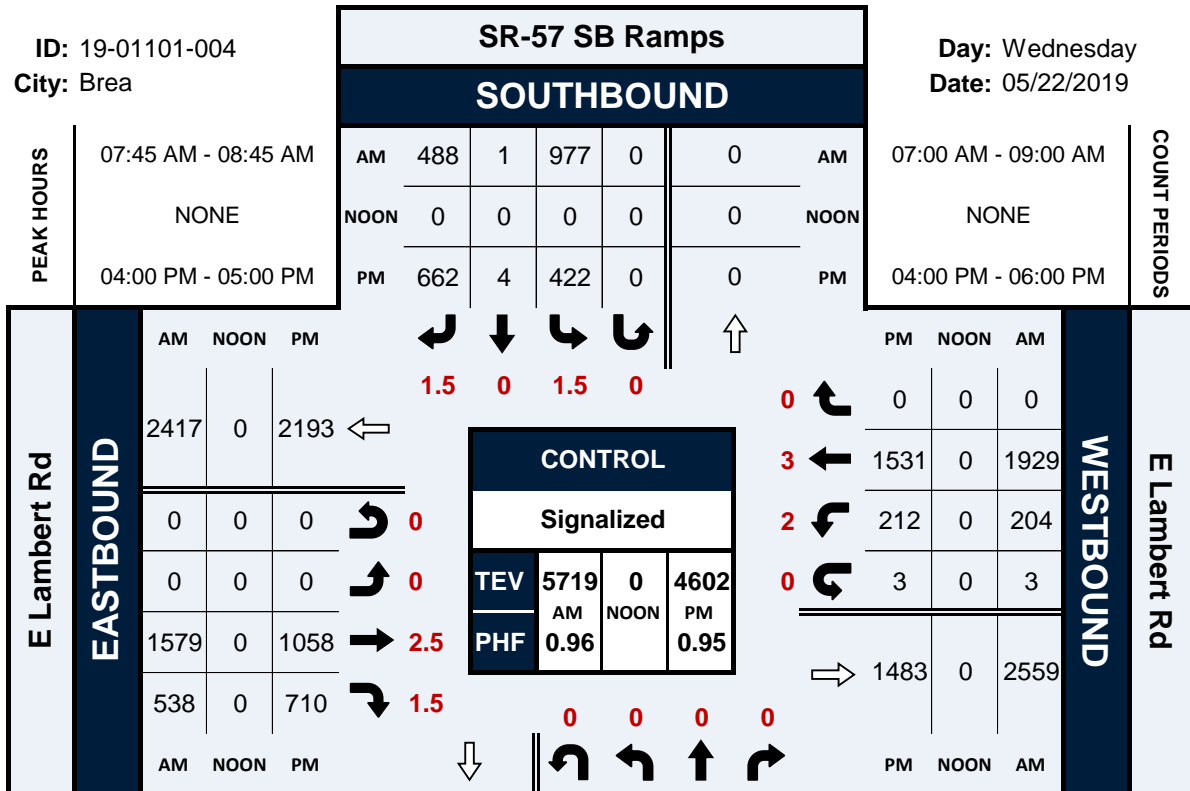


# SR-57 SB Ramps & E Lambert Rd

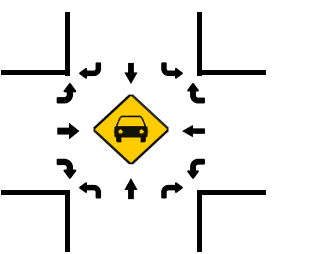
## Peak Hour Turning Movement Count

ID: 19-01101-004  
City: Brea

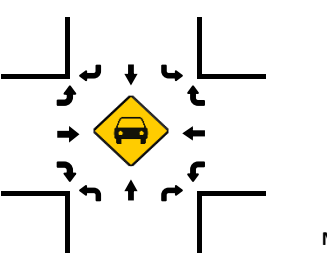
Day: Wednesday  
Date: 05/22/2019



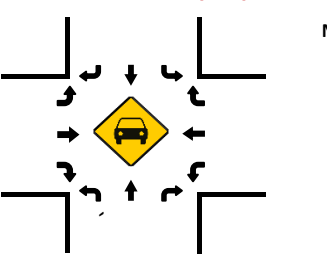
Total Vehicles (AM)



Total Vehicles (NOON)

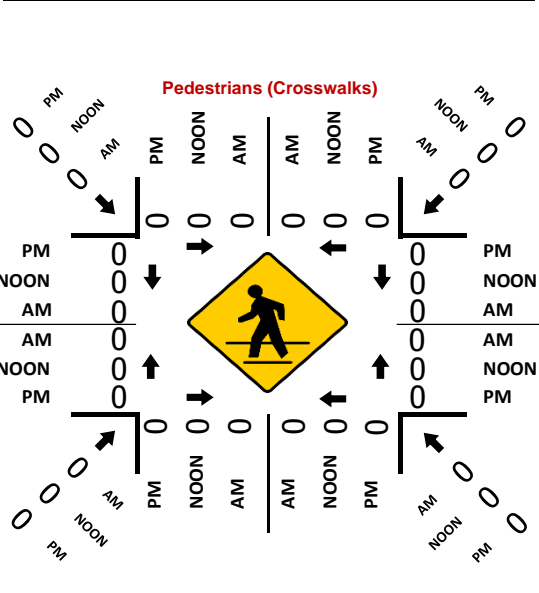


Total Vehicles (PM)

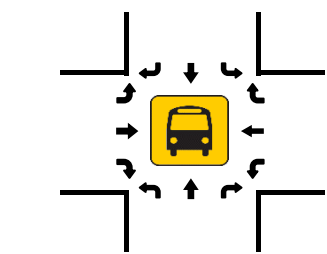


|      |     |   |   |   |   |      |
|------|-----|---|---|---|---|------|
| PM   | 926 | 0 | 0 | 0 | 0 | PM   |
| NOON | 0   | 0 | 0 | 0 | 0 | NOON |
| AM   | 743 | 0 | 0 | 0 | 0 | AM   |

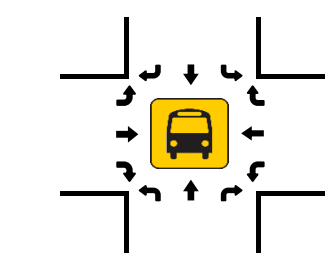
### NORTHBOUND SR-57 SB Ramps



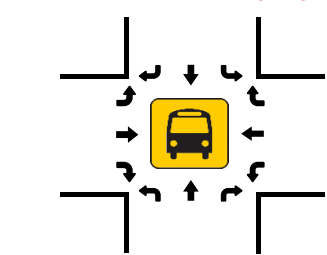
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** SR-57 NB Ramps & E Lambert Rd  
**City:** Brea  
**Control:** Signalized

**Project ID:** 19-01101-005  
**Date:** 5/22/2019

### Total

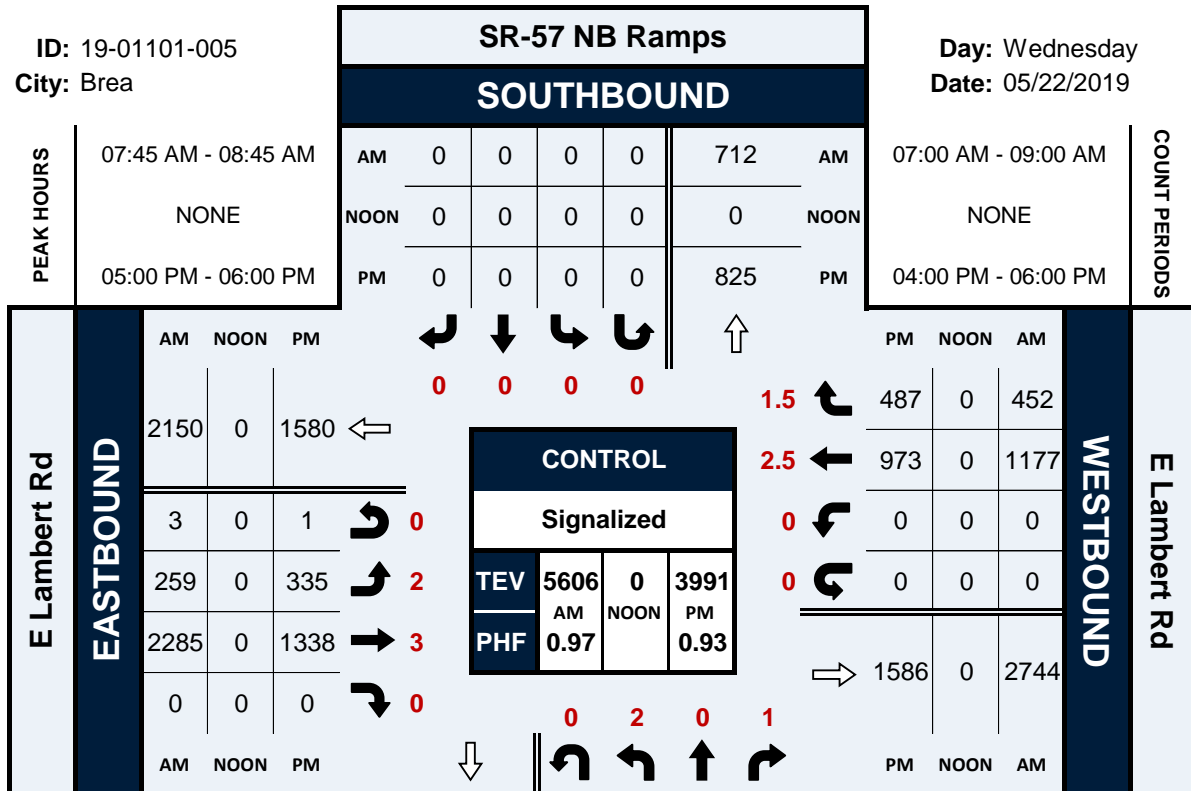
| NS/EW Streets:         | SR-57 NB Ramps      |       |        |       | SR-57 NB Ramps |       |       |       | E Lambert Rd |        |       |       | E Lambert Rd |        |        |       | TOTAL        |
|------------------------|---------------------|-------|--------|-------|----------------|-------|-------|-------|--------------|--------|-------|-------|--------------|--------|--------|-------|--------------|
|                        | NORTHBOUND          |       |        |       | SOUTHBOUND     |       |       |       | EASTBOUND    |        |       |       | WESTBOUND    |        |        |       |              |
| AM                     | NL                  | NT    | NR     | NU    | SL             | ST    | SR    | SU    | EL           | ET     | ER    | EU    | WL           | WT     | WR     | WU    |              |
| 7:00 AM                | 189                 | 0     | 88     | 0     | 0              | 0     | 0     | 0     | 72           | 409    | 0     | 0     | 0            | 143    | 124    | 0     | 1025         |
| 7:15 AM                | 265                 | 0     | 100    | 0     | 0              | 0     | 0     | 0     | 75           | 497    | 0     | 1     | 0            | 169    | 118    | 0     | 1225         |
| 7:30 AM                | 243                 | 0     | 93     | 0     | 0              | 0     | 0     | 0     | 60           | 520    | 0     | 1     | 0            | 220    | 128    | 0     | 1265         |
| 7:45 AM                | 276                 | 0     | 124    | 0     | 0              | 0     | 0     | 0     | 58           | 596    | 0     | 2     | 0            | 253    | 111    | 0     | 1420         |
| 8:00 AM                | 231                 | 0     | 115    | 0     | 0              | 0     | 0     | 0     | 53           | 588    | 0     | 1     | 0            | 305    | 108    | 0     | 1401         |
| 8:15 AM                | 236                 | 0     | 106    | 0     | 0              | 0     | 0     | 0     | 86           | 557    | 0     | 0     | 0            | 337    | 124    | 0     | 1446         |
| 8:30 AM                | 227                 | 1     | 114    | 0     | 0              | 0     | 0     | 0     | 62           | 544    | 0     | 0     | 0            | 282    | 109    | 0     | 1339         |
| 8:45 AM                | 239                 | 0     | 124    | 0     | 0              | 0     | 0     | 0     | 66           | 528    | 0     | 0     | 0            | 287    | 113    | 0     | 1357         |
| <b>TOTAL VOLUMES:</b>  | 1906                | 1     | 864    | 0     | 0              | 0     | 0     | 0     | 532          | 4239   | 0     | 5     | 0            | 1996   | 935    | 0     | 10478        |
| <b>APPROACH %'s:</b>   | 68.78%              | 0.04% | 31.18% | 0.00% |                |       |       |       | 11.14%       | 88.76% | 0.00% | 0.10% | 0.00%        | 68.10% | 31.90% | 0.00% |              |
| <b>PEAK HR:</b>        | 07:45 AM - 08:45 AM |       |        |       |                |       |       |       |              |        |       |       |              |        |        |       | <b>TOTAL</b> |
| <b>PEAK HR VOL:</b>    | 970                 | 1     | 459    | 0     | 0              | 0     | 0     | 0     | 259          | 2285   | 0     | 3     | 0            | 1177   | 452    | 0     | 5606         |
| <b>PEAK HR FACTOR:</b> | 0.879               | 0.250 | 0.925  | 0.000 | 0.000          | 0.000 | 0.000 | 0.000 | 0.753        | 0.958  | 0.000 | 0.375 | 0.000        | 0.873  | 0.911  | 0.000 | 0.969        |
|                        | 0.894               |       |        |       |                |       |       |       | 0.971        |        |       |       | 0.883        |        |        |       |              |
| PM                     | NL                  | NT    | NR     | NU    | SL             | ST    | SR    | SU    | EL           | ET     | ER    | EU    | WL           | WT     | WR     | WU    |              |
| 4:00 PM                | 223                 | 0     | 95     | 0     | 0              | 0     | 0     | 0     | 57           | 329    | 0     | 1     | 0            | 242    | 115    | 0     | 1062         |
| 4:15 PM                | 202                 | 0     | 72     | 0     | 0              | 0     | 0     | 0     | 81           | 349    | 0     | 1     | 0            | 233    | 122    | 0     | 956          |
| 4:30 PM                | 172                 | 1     | 72     | 0     | 0              | 0     | 0     | 0     | 77           | 265    | 0     | 0     | 0            | 242    | 127    | 0     | 909          |
| 4:45 PM                | 176                 | 1     | 69     | 0     | 0              | 0     | 0     | 0     | 57           | 232    | 0     | 0     | 0            | 253    | 121    | 0     | 843          |
| 5:00 PM                | 127                 | 1     | 46     | 0     | 0              | 0     | 0     | 0     | 54           | 231    | 0     | 1     | 0            | 264    | 119    | 0     | 1072         |
| 5:15 PM                | 141                 | 0     | 63     | 0     | 0              | 0     | 0     | 0     | 85           | 411    | 0     | 0     | 0            | 247    | 125    | 0     | 1047         |
| 5:30 PM                | 176                 | 1     | 78     | 0     | 0              | 0     | 0     | 0     | 95           | 363    | 0     | 0     | 0            | 222    | 112    | 0     | 1029         |
| 5:45 PM                | 162                 | 1     | 61     | 0     | 0              | 0     | 0     | 0     | 101          | 333    | 0     | 0     | 0            | 240    | 131    | 0     | 7978         |
| <b>TOTAL VOLUMES:</b>  | 1379                | 5     | 556    | 0     | 0              | 0     | 0     | 0     | 607          | 2513   | 0     | 3     | 0            | 1943   | 972    | 0     | 7978         |
| <b>APPROACH %'s:</b>   | 71.08%              | 0.26% | 28.66% | 0.00% |                |       |       |       | 19.44%       | 80.47% | 0.00% | 0.10% | 0.00%        | 66.66% | 33.34% | 0.00% |              |
| <b>PEAK HR:</b>        | 05:00 PM - 06:00 PM |       |        |       |                |       |       |       |              |        |       |       |              |        |        |       | <b>TOTAL</b> |
| <b>PEAK HR VOL:</b>    | 606                 | 3     | 248    | 0     | 0              | 0     | 0     | 0     | 335          | 1338   | 0     | 1     | 0            | 973    | 487    | 0     | 3991         |
| <b>PEAK HR FACTOR:</b> | 0.861               | 0.750 | 0.795  | 0.000 | 0.000          | 0.000 | 0.000 | 0.000 | 0.829        | 0.814  | 0.000 | 0.250 | 0.000        | 0.921  | 0.929  | 0.000 | 0.931        |
|                        | 0.840               |       |        |       |                |       |       |       | 0.844        |        |       |       | 0.953        |        |        |       |              |

# SR-57 NB Ramps & E Lambert Rd

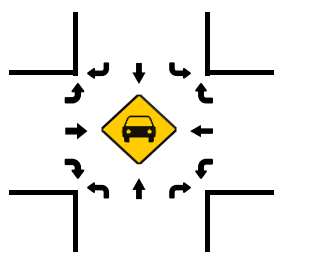
## Peak Hour Turning Movement Count

ID: 19-01101-005  
City: Brea

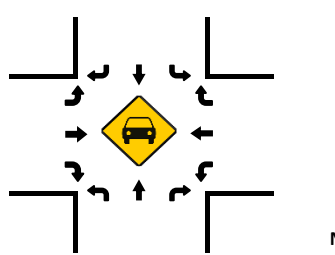
Day: Wednesday  
Date: 05/22/2019



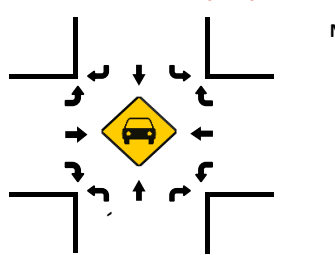
Total Vehicles (AM)



Total Vehicles (NOON)

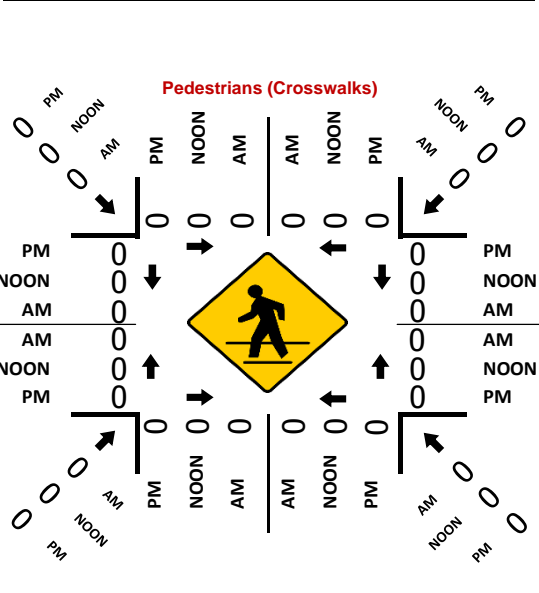


Total Vehicles (PM)

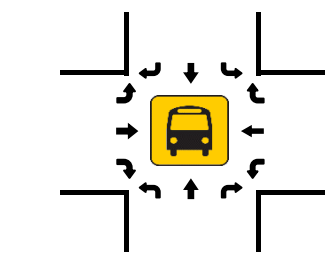


|      |   |   |     |   |     |      |
|------|---|---|-----|---|-----|------|
| PM   | 0 | 0 | 606 | 3 | 248 | PM   |
| NOON | 0 | 0 | 0   | 0 | 0   | NOON |
| AM   | 0 | 0 | 970 | 1 | 459 | AM   |

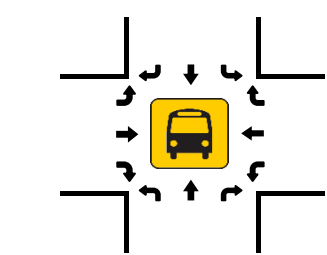
### NORTHBOUND SR-57 NB Ramps



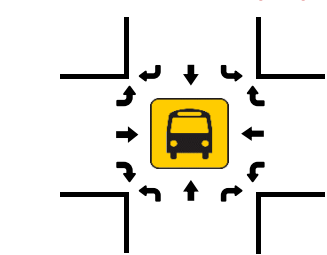
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Pointe Dr & Lambert Rd  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-001  
 Date: 11/13/2018

### Total

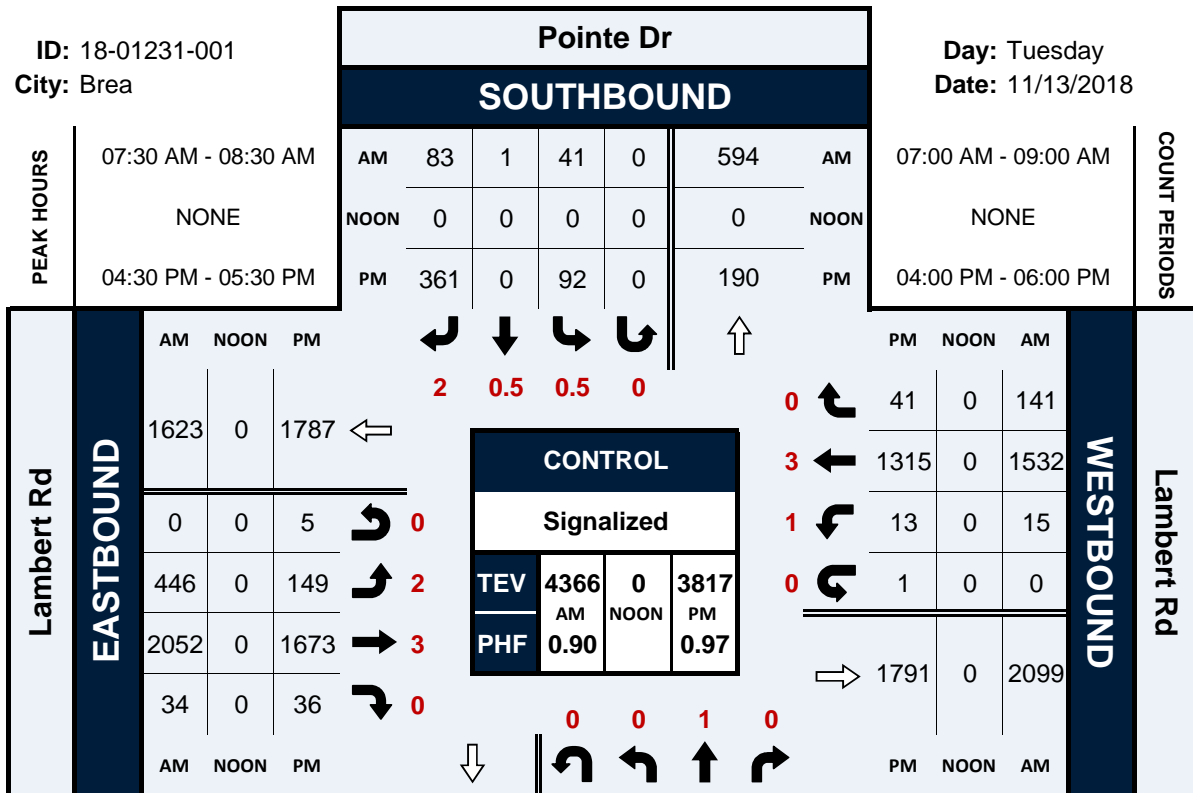
| NS/EW Streets:          | Pointe Dr           |        |        |       | Pointe Dr  |       |        |       | Lambert Rd |        |       |       | Lambert Rd |        |       |       | TOTAL |
|-------------------------|---------------------|--------|--------|-------|------------|-------|--------|-------|------------|--------|-------|-------|------------|--------|-------|-------|-------|
|                         | NORTHBOUND          |        |        |       | SOUTHBOUND |       |        |       | EASTBOUND  |        |       |       | WESTBOUND  |        |       |       |       |
| AM                      | 0                   | 1      | 0      | 0     | 0.5        | 0.5   | 2      | 0     | 2          | 3      | 0     | 0     | 1          | 3      | 0     | 0     | TOTAL |
|                         | NL                  | NT     | NR     | NU    | SL         | ST    | SR     | SU    | EL         | ET     | ER    | EU    | WL         | WT     | WR    | WU    |       |
| 7:00 AM                 | 1                   | 1      | 1      | 0     | 5          | 0     | 23     | 0     | 67         | 374    | 2     | 1     | 1          | 279    | 17    | 1     | 773   |
| 7:15 AM                 | 1                   | 0      | 0      | 0     | 5          | 0     | 24     | 0     | 63         | 460    | 6     | 0     | 0          | 285    | 18    | 0     | 862   |
| 7:30 AM                 | 2                   | 2      | 0      | 0     | 8          | 0     | 23     | 0     | 70         | 563    | 1     | 0     | 3          | 351    | 24    | 0     | 1047  |
| 7:45 AM                 | 2                   | 2      | 3      | 0     | 11         | 0     | 17     | 0     | 125        | 581    | 1     | 0     | 5          | 424    | 37    | 0     | 1208  |
| 8:00 AM                 | 3                   | 2      | 0      | 0     | 6          | 1     | 18     | 0     | 120        | 514    | 13    | 0     | 3          | 409    | 36    | 0     | 1125  |
| 8:15 AM                 | 1                   | 1      | 3      | 0     | 16         | 0     | 25     | 0     | 131        | 394    | 19    | 0     | 4          | 348    | 44    | 0     | 986   |
| 8:30 AM                 | 9                   | 0      | 3      | 0     | 4          | 1     | 13     | 0     | 113        | 434    | 13    | 2     | 2          | 296    | 31    | 0     | 921   |
| 8:45 AM                 | 11                  | 0      | 3      | 0     | 11         | 0     | 21     | 0     | 90         | 382    | 13    | 0     | 6          | 310    | 12    | 1     | 860   |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT     | NR     | NU    | SL         | ST    | SR     | SU    | EL         | ET     | ER    | EU    | WL         | WT     | WR    | WU    | TOTAL |
| <b>APPROACH %'s :</b>   | 30                  | 8      | 13     | 0     | 66         | 2     | 164    | 0     | 779        | 3702   | 68    | 3     | 24         | 2702   | 219   | 2     | 7782  |
|                         | 58.82%              | 15.69% | 25.49% | 0.00% | 28.45%     | 0.86% | 70.69% | 0.00% | 17.11%     | 81.33% | 1.49% | 0.07% | 0.81%      | 91.69% | 7.43% | 0.07% |       |
| <b>PEAK HR :</b>        | 07:30 AM - 08:30 AM |        |        |       |            |       |        |       |            |        |       |       |            |        |       |       | TOTAL |
| <b>PEAK HR VOL :</b>    | 8                   | 7      | 6      | 0     | 41         | 1     | 83     | 0     | 446        | 2052   | 34    | 0     | 15         | 1532   | 141   | 0     | 4366  |
| <b>PEAK HR FACTOR :</b> | 0.667               | 0.875  | 0.500  | 0.000 | 0.641      | 0.250 | 0.830  | 0.000 | 0.851      | 0.883  | 0.447 | 0.000 | 0.750      | 0.903  | 0.801 | 0.000 | 0.904 |
|                         | 0.750               |        |        |       | 0.762      |       |        |       | 0.895      |        |       |       | 0.906      |        |       |       |       |
| PM                      | 0                   | 1      | 0      | 0     | 0.5        | 0.5   | 2      | 0     | 2          | 3      | 0     | 0     | 1          | 3      | 0     | 0     | TOTAL |
|                         | NL                  | NT     | NR     | NU    | SL         | ST    | SR     | SU    | EL         | ET     | ER    | EU    | WL         | WT     | WR    | WU    |       |
| 4:00 PM                 | 19                  | 0      | 7      | 0     | 21         | 1     | 93     | 0     | 36         | 401    | 3     | 3     | 3          | 327    | 4     | 0     | 918   |
| 4:15 PM                 | 12                  | 1      | 3      | 0     | 24         | 0     | 71     | 0     | 33         | 396    | 13    | 1     | 2          | 331    | 10    | 0     | 897   |
| 4:30 PM                 | 28                  | 0      | 8      | 0     | 14         | 0     | 92     | 0     | 38         | 422    | 6     | 1     | 5          | 354    | 13    | 0     | 981   |
| 4:45 PM                 | 15                  | 0      | 3      | 0     | 27         | 0     | 79     | 0     | 39         | 425    | 11    | 1     | 5          | 326    | 11    | 0     | 942   |
| 5:00 PM                 | 38                  | 0      | 8      | 0     | 31         | 0     | 111    | 0     | 35         | 405    | 8     | 3     | 0          | 334    | 6     | 0     | 979   |
| 5:15 PM                 | 25                  | 0      | 6      | 0     | 20         | 0     | 79     | 0     | 37         | 421    | 11    | 0     | 3          | 301    | 11    | 1     | 915   |
| 5:30 PM                 | 17                  | 0      | 5      | 0     | 29         | 0     | 109    | 0     | 60         | 395    | 6     | 1     | 4          | 267    | 21    | 0     | 914   |
| 5:45 PM                 | 16                  | 1      | 4      | 0     | 20         | 0     | 67     | 0     | 46         | 417    | 3     | 3     | 1          | 260    | 13    | 0     | 851   |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT     | NR     | NU    | SL         | ST    | SR     | SU    | EL         | ET     | ER    | EU    | WL         | WT     | WR    | WU    | TOTAL |
| <b>APPROACH %'s :</b>   | 170                 | 2      | 44     | 0     | 186        | 1     | 701    | 0     | 324        | 3282   | 61    | 13    | 23         | 2500   | 89    | 1     | 7397  |
|                         | 78.70%              | 0.93%  | 20.37% | 0.00% | 20.95%     | 0.11% | 78.94% | 0.00% | 8.80%      | 89.18% | 1.66% | 0.35% | 0.88%      | 95.68% | 3.41% | 0.04% |       |
| <b>PEAK HR :</b>        | 04:30 PM - 05:30 PM |        |        |       |            |       |        |       |            |        |       |       |            |        |       |       | TOTAL |
| <b>PEAK HR VOL :</b>    | 106                 | 0      | 25     | 0     | 92         | 0     | 361    | 0     | 149        | 1673   | 36    | 5     | 13         | 1315   | 41    | 1     | 3817  |
| <b>PEAK HR FACTOR :</b> | 0.697               | 0.000  | 0.781  | 0.000 | 0.742      | 0.000 | 0.813  | 0.000 | 0.955      | 0.984  | 0.818 | 0.417 | 0.650      | 0.929  | 0.788 | 0.250 | 0.973 |
|                         | 0.712               |        |        |       | 0.798      |       |        |       | 0.978      |        |       |       | 0.921      |        |       |       |       |

# Pointe Dr & Lambert Rd

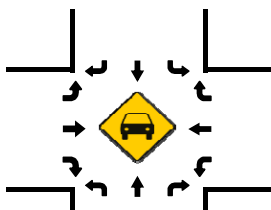
## Peak Hour Turning Movement Count

ID: 18-01231-001  
City: Brea

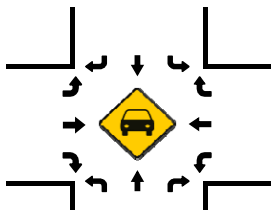
Day: Tuesday  
Date: 11/13/2018



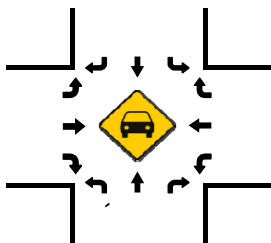
Total Vehicles (AM)



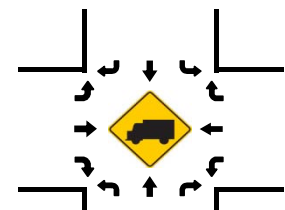
Total Vehicles (Noon)



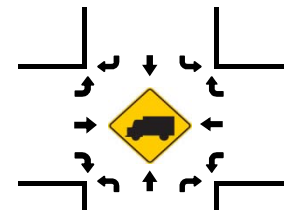
Total Vehicles (PM)



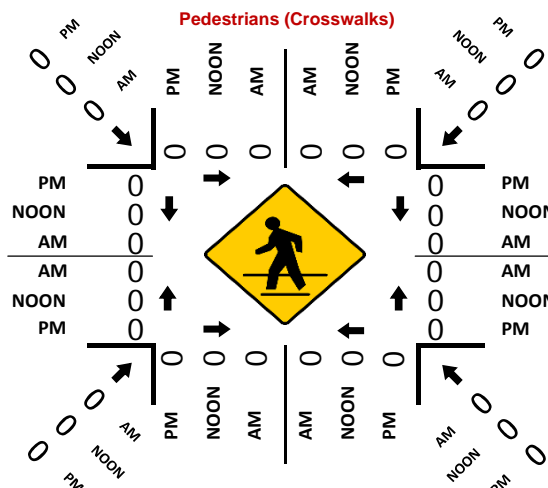
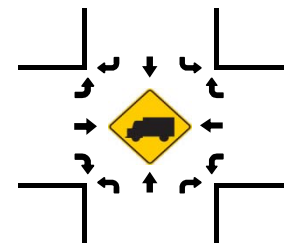
2axle (AM)



2axle (NOON)



2axle (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

Location: Wildcat Way/N Associated Rd & Lambert Rd  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-002  
 Date: 11/13/2018

**Total**

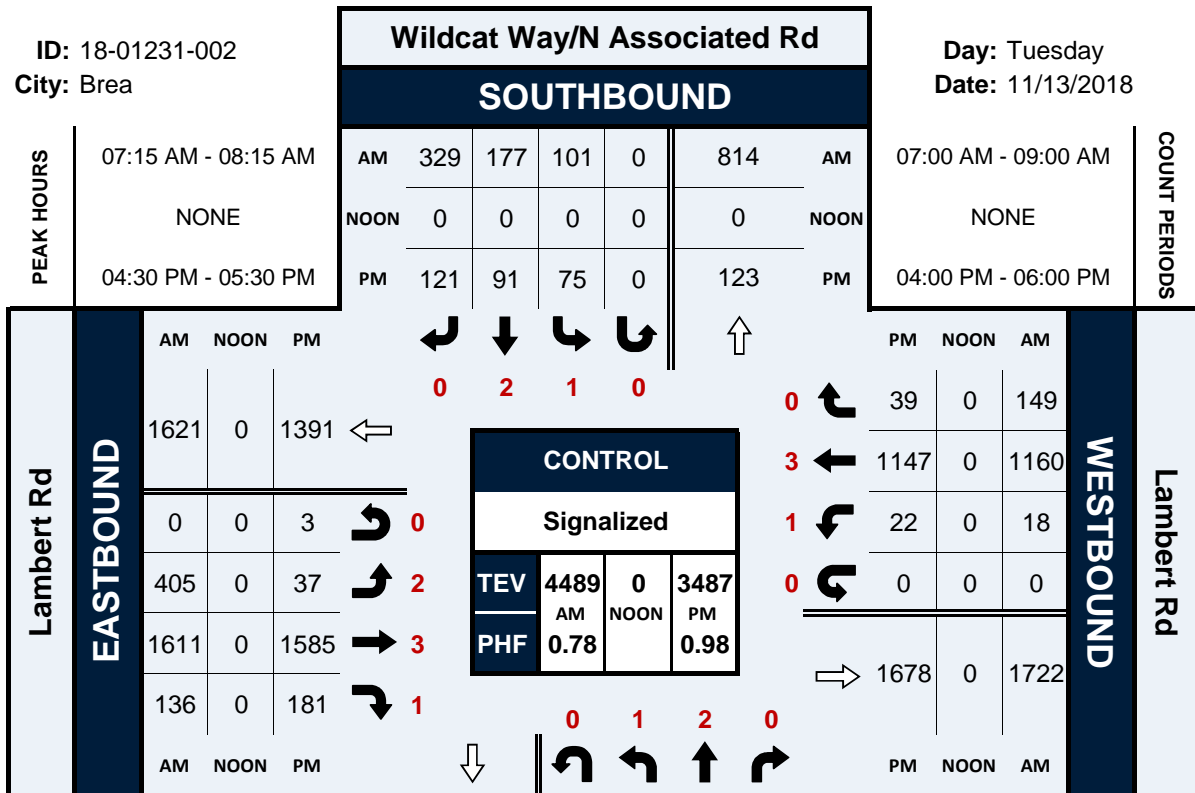
| NS/EW Streets:          | Wildcat Way/N Associated Rd |         |         |         | Wildcat Way/N Associated Rd |         |         |         | Lambert Rd |         |         |         | Lambert Rd |         |         |         | TOTAL      |
|-------------------------|-----------------------------|---------|---------|---------|-----------------------------|---------|---------|---------|------------|---------|---------|---------|------------|---------|---------|---------|------------|
|                         | NORTHBOUND                  |         |         |         | SOUTHBOUND                  |         |         |         | EASTBOUND  |         |         |         | WESTBOUND  |         |         |         |            |
| AM                      | 1<br>NL                     | 2<br>NT | 0<br>NR | 0<br>NU | 1<br>SL                     | 2<br>ST | 0<br>SR | 0<br>SU | 2<br>EL    | 3<br>ET | 1<br>ER | 0<br>EU | 1<br>WL    | 3<br>WT | 0<br>WR | 0<br>WU | TOTAL      |
| 7:00 AM                 | 20                          | 12      | 0       | 0       | 25                          | 28      | 62      | 0       | 37         | 316     | 22      | 0       | 1          | 212     | 7       | 0       | 742        |
| 7:15 AM                 | 26                          | 35      | 5       | 0       | 9                           | 6       | 27      | 0       | 60         | 403     | 14      | 0       | 2          | 266     | 15      | 0       | 868        |
| 7:30 AM                 | 40                          | 88      | 3       | 1       | 18                          | 42      | 84      | 0       | 141        | 390     | 23      | 0       | 2          | 248     | 46      | 0       | 1126       |
| 7:45 AM                 | 34                          | 130     | 1       | 0       | 47                          | 97      | 153     | 0       | 173        | 397     | 42      | 0       | 8          | 288     | 77      | 0       | 1447       |
| 8:00 AM                 | 32                          | 7       | 1       | 0       | 27                          | 32      | 65      | 0       | 31         | 421     | 57      | 0       | 6          | 358     | 11      | 0       | 1048       |
| 8:15 AM                 | 43                          | 7       | 7       | 0       | 6                           | 8       | 12      | 0       | 17         | 370     | 45      | 0       | 6          | 327     | 8       | 0       | 856        |
| 8:30 AM                 | 28                          | 5       | 5       | 0       | 2                           | 1       | 4       | 0       | 21         | 376     | 24      | 1       | 7          | 300     | 5       | 0       | 779        |
| 8:45 AM                 | 30                          | 8       | 0       | 0       | 4                           | 1       | 10      | 0       | 25         | 356     | 27      | 0       | 6          | 289     | 18      | 0       | 774        |
| <b>TOTAL VOLUMES :</b>  | NL 253                      | NT 292  | NR 22   | NU 1    | SL 138                      | ST 215  | SR 417  | SU 0    | EL 505     | ET 3029 | ER 254  | EU 1    | WL 38      | WT 2288 | WR 187  | WU 0    | TOTAL 7640 |
| <b>APPROACH %'s :</b>   | 44.54%                      | 51.41%  | 3.87%   | 0.18%   | 17.92%                      | 27.92%  | 54.16%  | 0.00%   | 13.33%     | 79.94%  | 6.70%   | 0.03%   | 1.51%      | 91.05%  | 7.44%   | 0.00%   |            |
| <b>PEAK HR :</b>        | 07:15 AM - 08:15 AM         |         |         |         |                             |         |         |         |            |         |         |         |            |         |         |         | TOTAL 4489 |
| <b>PEAK HR VOL :</b>    | 132                         | 260     | 10      | 1       | 101                         | 177     | 329     | 0       | 405        | 1611    | 136     | 0       | 18         | 1160    | 149     | 0       | 4489       |
| <b>PEAK HR FACTOR :</b> | 0.825                       | 0.500   | 0.500   | 0.250   | 0.537                       | 0.456   | 0.538   | 0.000   | 0.585      | 0.957   | 0.596   | 0.000   | 0.563      | 0.810   | 0.484   | 0.000   | 0.776      |
|                         | 0.611                       |         |         |         | 0.511                       |         |         |         | 0.879      |         |         |         | 0.885      |         |         |         |            |
| PM                      | 1<br>NL                     | 2<br>NT | 0<br>NR | 0<br>NU | 1<br>SL                     | 2<br>ST | 0<br>SR | 0<br>SU | 2<br>EL    | 3<br>ET | 1<br>ER | 0<br>EU | 1<br>WL    | 3<br>WT | 0<br>WR | 0<br>WU | TOTAL      |
| 4:00 PM                 | 23                          | 8       | 2       | 0       | 23                          | 29      | 40      | 0       | 18         | 363     | 39      | 0       | 5          | 281     | 13      | 0       | 844        |
| 4:15 PM                 | 25                          | 12      | 3       | 0       | 12                          | 23      | 40      | 0       | 12         | 369     | 33      | 1       | 5          | 264     | 7       | 1       | 807        |
| 4:30 PM                 | 34                          | 4       | 4       | 0       | 15                          | 11      | 26      | 0       | 13         | 394     | 51      | 1       | 4          | 304     | 7       | 0       | 868        |
| 4:45 PM                 | 32                          | 8       | 3       | 0       | 20                          | 10      | 21      | 0       | 11         | 405     | 34      | 1       | 4          | 305     | 5       | 0       | 859        |
| 5:00 PM                 | 20                          | 18      | 8       | 0       | 23                          | 34      | 48      | 0       | 7          | 388     | 41      | 0       | 6          | 287     | 13      | 0       | 893        |
| 5:15 PM                 | 34                          | 17      | 3       | 1       | 17                          | 36      | 26      | 0       | 6          | 398     | 55      | 1       | 8          | 251     | 14      | 0       | 867        |
| 5:30 PM                 | 31                          | 11      | 4       | 0       | 18                          | 25      | 31      | 0       | 10         | 384     | 50      | 2       | 5          | 229     | 9       | 0       | 809        |
| 5:45 PM                 | 19                          | 6       | 5       | 0       | 11                          | 12      | 25      | 0       | 21         | 377     | 41      | 0       | 1          | 218     | 19      | 0       | 755        |
| <b>TOTAL VOLUMES :</b>  | NL 218                      | NT 84   | NR 32   | NU 1    | SL 139                      | ST 180  | SR 257  | SU 0    | EL 98      | ET 3078 | ER 344  | EU 6    | WL 38      | WT 2139 | WR 87   | WU 1    | TOTAL 6702 |
| <b>APPROACH %'s :</b>   | 65.07%                      | 25.07%  | 9.55%   | 0.30%   | 24.13%                      | 31.25%  | 44.62%  | 0.00%   | 2.78%      | 87.29%  | 9.76%   | 0.17%   | 1.68%      | 94.44%  | 3.84%   | 0.04%   |            |
| <b>PEAK HR :</b>        | 04:30 PM - 05:30 PM         |         |         |         |                             |         |         |         |            |         |         |         |            |         |         |         | TOTAL 3487 |
| <b>PEAK HR VOL :</b>    | 120                         | 47      | 18      | 1       | 75                          | 91      | 121     | 0       | 37         | 1585    | 181     | 3       | 22         | 1147    | 39      | 0       | 3487       |
| <b>PEAK HR FACTOR :</b> | 0.882                       | 0.653   | 0.563   | 0.250   | 0.815                       | 0.632   | 0.630   | 0.000   | 0.712      | 0.978   | 0.823   | 0.750   | 0.688      | 0.940   | 0.696   | 0.000   | 0.976      |
|                         | 0.845                       |         |         |         | 0.683                       |         |         |         | 0.982      |         |         |         | 0.959      |         |         |         |            |

# Wildcat Way/N Associated Rd & Lambert Rd

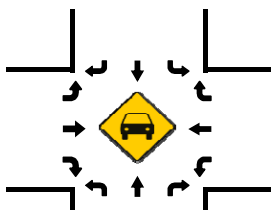
## Peak Hour Turning Movement Count

ID: 18-01231-002  
City: Brea

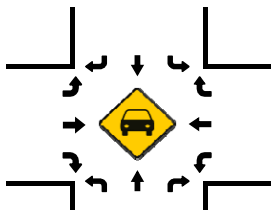
Day: Tuesday  
Date: 11/13/2018



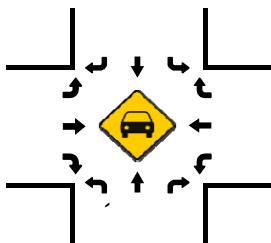
Total Vehicles (AM)



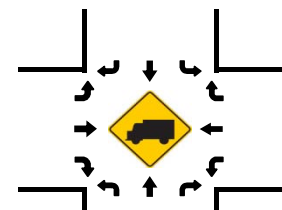
Total Vehicles (Noon)



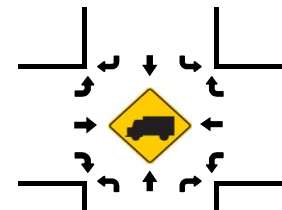
Total Vehicles (PM)



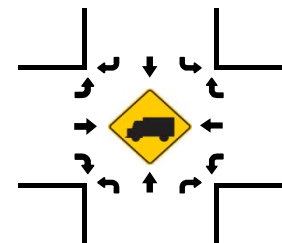
2axle (AM)



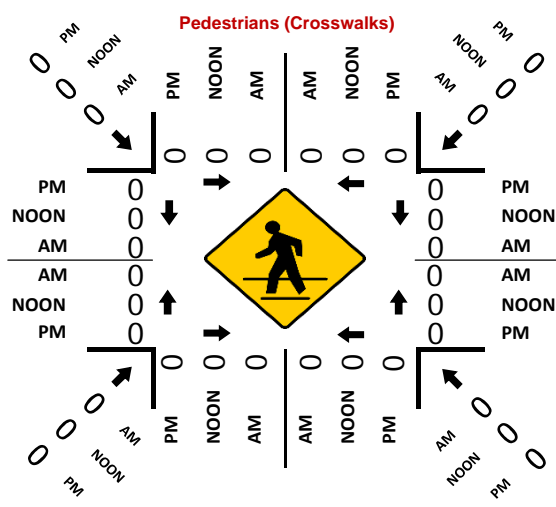
2axle (NOON)



2axle (PM)



|      |     |   |     |     |    |      |
|------|-----|---|-----|-----|----|------|
| PM   | 295 | 1 | 120 | 47  | 18 | PM   |
| NOON | 0   | 0 | 0   | 0   | 0  | NOON |
| AM   | 332 | 1 | 132 | 260 | 10 | AM   |



# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** N Kraemer Blvd & E Lambert Rd  
**City:** Brea  
**Control:** Signalized

**Project ID:** 19-01101-006  
**Date:** 5/22/2019

### Total

| NS/EW Streets:         | N Kraemer Blvd             |        |        |       | N Kraemer Blvd |        |        |       | E Lambert Rd |        |        |       | E Lambert Rd |        |       |       |              |
|------------------------|----------------------------|--------|--------|-------|----------------|--------|--------|-------|--------------|--------|--------|-------|--------------|--------|-------|-------|--------------|
| AM                     | NORTHBOUND                 |        |        |       | SOUTHBOUND     |        |        |       | EASTBOUND    |        |        |       | WESTBOUND    |        |       |       | TOTAL        |
|                        | NL                         | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR    | WU    |              |
| 7:00 AM                | 49                         | 7      | 2      | 0     | 0              | 35     | 35     | 0     | 11           | 130    | 242    | 0     | 53           | 139    | 1     | 0     | 704          |
| 7:15 AM                | 57                         | 7      | 2      | 0     | 0              | 43     | 59     | 0     | 10           | 154    | 244    | 0     | 50           | 168    | 2     | 0     | 796          |
| 7:30 AM                | 53                         | 14     | 5      | 0     | 5              | 69     | 59     | 0     | 8            | 156    | 251    | 0     | 69           | 176    | 4     | 0     | 869          |
| 7:45 AM                | 73                         | 47     | 9      | 0     | 12             | 63     | 71     | 0     | 23           | 152    | 283    | 0     | 71           | 152    | 5     | 0     | 961          |
| 8:00 AM                | 85                         | 29     | 7      | 0     | 0              | 22     | 98     | 0     | 20           | 136    | 226    | 0     | 66           | 181    | 3     | 0     | 873          |
| 8:15 AM                | 61                         | 15     | 8      | 0     | 1              | 46     | 74     | 0     | 39           | 158    | 228    | 0     | 42           | 168    | 0     | 0     | 840          |
| 8:30 AM                | 77                         | 13     | 6      | 0     | 0              | 41     | 64     | 0     | 34           | 147    | 239    | 0     | 45           | 191    | 1     | 0     | 858          |
| 8:45 AM                | 58                         | 17     | 4      | 0     | 0              | 39     | 82     | 0     | 31           | 145    | 223    | 0     | 35           | 164    | 1     | 0     | 799          |
| <b>TOTAL VOLUMES:</b>  | NL                         | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR    | WU    | TOTAL        |
| <b>APPROACH %'s:</b>   | 513                        | 149    | 43     | 0     | 18             | 358    | 542    | 0     | 176          | 1178   | 1936   | 0     | 431          | 1339   | 17    | 0     | 6700         |
|                        | 72.77%                     | 21.13% | 6.10%  | 0.00% | 1.96%          | 39.00% | 59.04% | 0.00% | 5.35%        | 35.81% | 58.84% | 0.00% | 24.12%       | 74.93% | 0.95% | 0.00% |              |
| <b>PEAK HR:</b>        | <b>07:30 AM - 08:30 AM</b> |        |        |       |                |        |        |       |              |        |        |       |              |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL:</b>    | 272                        | 105    | 29     | 0     | 18             | 200    | 302    | 0     | 90           | 602    | 988    | 0     | 248          | 677    | 12    | 0     | 3543         |
| <b>PEAK HR FACTOR:</b> | 0.800                      | 0.559  | 0.806  | 0.000 | 0.375          | 0.725  | 0.770  | 0.000 | 0.577        | 0.953  | 0.873  | 0.000 | 0.873        | 0.935  | 0.600 | 0.000 | 0.922        |
|                        | 0.787                      |        |        |       | 0.890          |        |        |       | 0.917        |        |        |       | 0.937        |        |       |       |              |
| PM                     | NORTHBOUND                 |        |        |       | SOUTHBOUND     |        |        |       | EASTBOUND    |        |        |       | WESTBOUND    |        |       |       | TOTAL        |
|                        | NL                         | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR    | WU    |              |
| 4:00 PM                | 152                        | 48     | 45     | 0     | 0              | 26     | 19     | 0     | 34           | 185    | 128    | 0     | 28           | 123    | 12    | 0     | 800          |
| 4:15 PM                | 101                        | 41     | 51     | 0     | 0              | 29     | 31     | 0     | 44           | 211    | 141    | 0     | 19           | 78     | 7     | 0     | 753          |
| 4:30 PM                | 137                        | 44     | 63     | 0     | 0              | 28     | 23     | 0     | 23           | 155    | 105    | 0     | 12           | 74     | 4     | 0     | 668          |
| 4:45 PM                | 133                        | 58     | 60     | 0     | 1              | 27     | 28     | 0     | 36           | 144    | 84     | 0     | 10           | 71     | 7     | 0     | 659          |
| 5:00 PM                | 115                        | 65     | 55     | 0     | 3              | 17     | 24     | 0     | 33           | 133    | 93     | 0     | 3            | 72     | 8     | 0     | 621          |
| 5:15 PM                | 102                        | 83     | 54     | 0     | 1              | 29     | 26     | 0     | 51           | 247    | 136    | 0     | 18           | 83     | 8     | 0     | 838          |
| 5:30 PM                | 128                        | 78     | 47     | 0     | 0              | 29     | 22     | 0     | 44           | 212    | 102    | 0     | 27           | 59     | 2     | 0     | 750          |
| 5:45 PM                | 120                        | 48     | 47     | 0     | 0              | 17     | 34     | 0     | 41           | 180    | 107    | 0     | 25           | 92     | 7     | 0     | 718          |
| <b>TOTAL VOLUMES:</b>  | NL                         | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR    | WU    | TOTAL        |
| <b>APPROACH %'s:</b>   | 988                        | 465    | 422    | 0     | 5              | 202    | 207    | 0     | 306          | 1467   | 896    | 0     | 142          | 652    | 55    | 0     | 5807         |
|                        | 52.69%                     | 24.80% | 22.51% | 0.00% | 1.21%          | 48.79% | 50.00% | 0.00% | 11.46%       | 54.96% | 33.57% | 0.00% | 16.73%       | 76.80% | 6.48% | 0.00% |              |
| <b>PEAK HR:</b>        | <b>05:00 PM - 06:00 PM</b> |        |        |       |                |        |        |       |              |        |        |       |              |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL:</b>    | 465                        | 274    | 203    | 0     | 4              | 92     | 106    | 0     | 169          | 772    | 438    | 0     | 73           | 306    | 25    | 0     | 2927         |
| <b>PEAK HR FACTOR:</b> | 0.908                      | 0.825  | 0.923  | 0.000 | 0.333          | 0.793  | 0.779  | 0.000 | 0.828        | 0.781  | 0.805  | 0.000 | 0.676        | 0.832  | 0.781 | 0.000 | 0.873        |
|                        | 0.931                      |        |        |       | 0.902          |        |        |       | 0.794        |        |        |       | 0.815        |        |       |       |              |

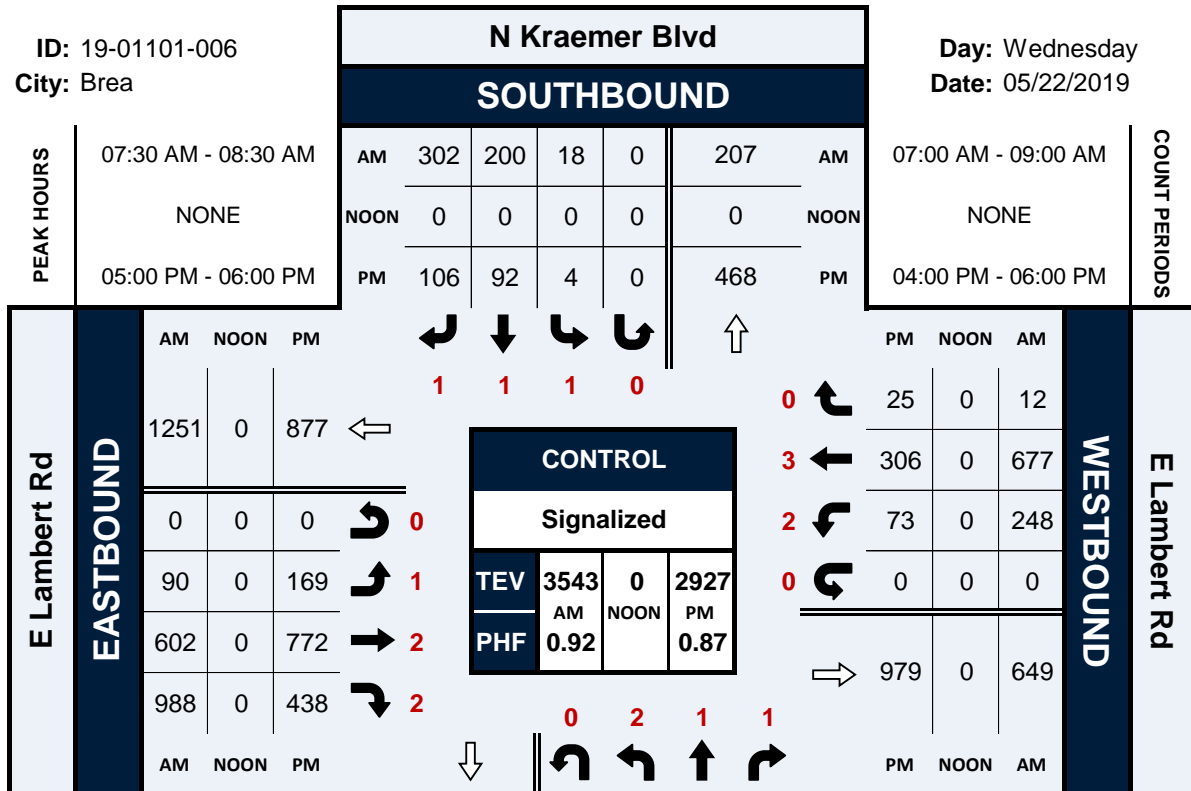


# N Kraemer Blvd & E Lambert Rd

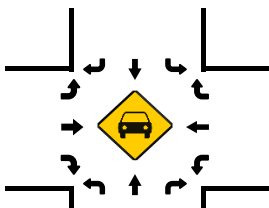
## Peak Hour Turning Movement Count

ID: 19-01101-006  
City: Brea

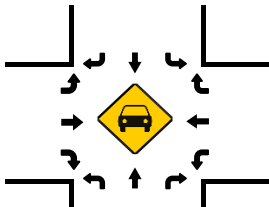
Day: Wednesday  
Date: 05/22/2019



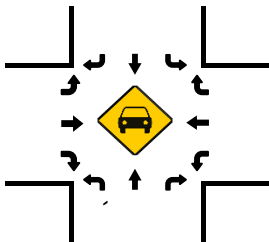
Total Vehicles (AM)



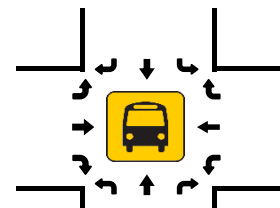
Total Vehicles (NOON)



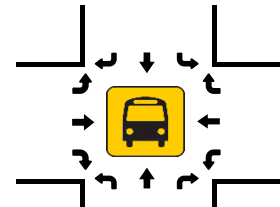
Total Vehicles (PM)



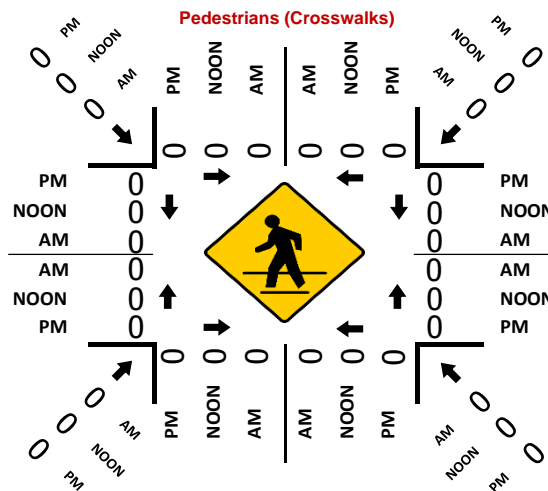
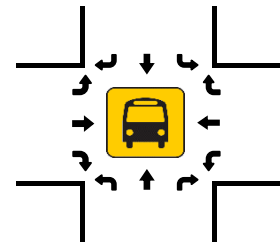
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Sunflower St & Lambert Rd  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-003  
 Date: 11/13/2018

### Total

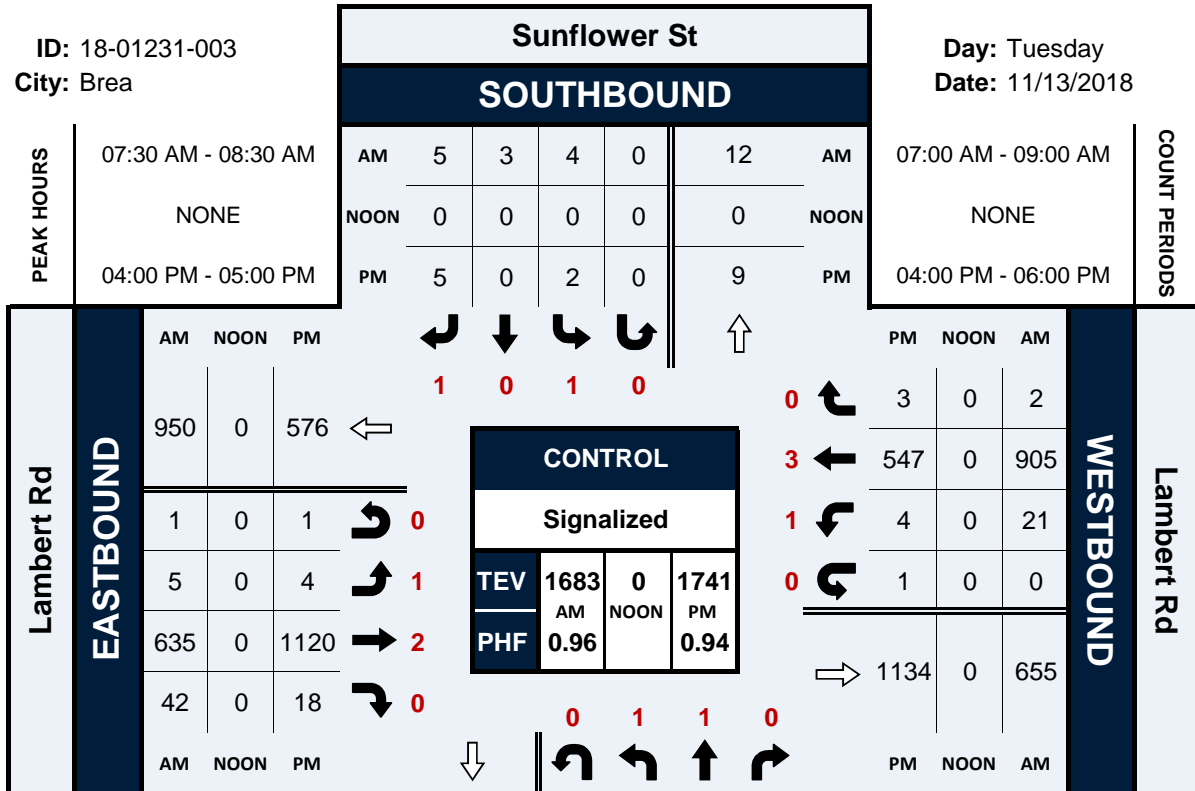
| NS/EW Streets:          | Sunflower St        |         |         |         | Sunflower St |         |         |         | Lambert Rd |         |         |         | Lambert Rd |         |         |         | TOTAL        |
|-------------------------|---------------------|---------|---------|---------|--------------|---------|---------|---------|------------|---------|---------|---------|------------|---------|---------|---------|--------------|
|                         | NORTHBOUND          |         |         |         | SOUTHBOUND   |         |         |         | EASTBOUND  |         |         |         | WESTBOUND  |         |         |         |              |
| AM                      | 1<br>NL             | 1<br>NT | 0<br>NR | 0<br>NU | 1<br>SL      | 0<br>ST | 1<br>SR | 0<br>SU | 1<br>EL    | 2<br>ET | 0<br>ER | 0<br>EU | 1<br>WL    | 3<br>WT | 0<br>WR | 0<br>WU |              |
| 7:00 AM                 | 2                   | 0       | 1       | 0       | 1            | 1       | 0       | 0       | 0          | 144     | 0       | 0       | 3          | 174     | 1       | 0       | 327          |
| 7:15 AM                 | 3                   | 0       | 1       | 0       | 3            | 0       | 3       | 0       | 0          | 170     | 3       | 0       | 1          | 200     | 1       | 0       | 385          |
| 7:30 AM                 | 11                  | 0       | 4       | 0       | 1            | 0       | 1       | 0       | 1          | 166     | 12      | 1       | 3          | 220     | 1       | 0       | 421          |
| 7:45 AM                 | 14                  | 3       | 11      | 0       | 1            | 2       | 4       | 0       | 3          | 153     | 22      | 0       | 12         | 201     | 0       | 0       | 426          |
| 8:00 AM                 | 9                   | 1       | 1       | 0       | 1            | 1       | 0       | 0       | 1          | 160     | 7       | 0       | 3          | 254     | 0       | 0       | 438          |
| 8:15 AM                 | 5                   | 1       | 0       | 0       | 1            | 0       | 0       | 0       | 0          | 156     | 1       | 0       | 3          | 230     | 1       | 0       | 398          |
| 8:30 AM                 | 2                   | 0       | 0       | 0       | 2            | 0       | 0       | 0       | 0          | 132     | 2       | 2       | 2          | 254     | 0       | 0       | 396          |
| 8:45 AM                 | 6                   | 0       | 0       | 0       | 2            | 0       | 0       | 0       | 0          | 160     | 4       | 0       | 2          | 245     | 2       | 1       | 422          |
| <b>TOTAL VOLUMES :</b>  | 52                  | 5       | 18      | 0       | 12           | 4       | 8       | 0       | 5          | 1241    | 51      | 3       | 29         | 1778    | 6       | 1       | 3213         |
| <b>APPROACH %'s :</b>   | 69.33%              | 6.67%   | 24.00%  | 0.00%   | 50.00%       | 16.67%  | 33.33%  | 0.00%   | 0.38%      | 95.46%  | 3.92%   | 0.23%   | 1.60%      | 98.02%  | 0.33%   | 0.06%   |              |
| <b>PEAK HR :</b>        | 07:30 AM - 08:30 AM |         |         |         |              |         |         |         |            |         |         |         |            |         |         |         | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 39                  | 5       | 16      | 0       | 4            | 3       | 5       | 0       | 5          | 635     | 42      | 1       | 21         | 905     | 2       | 0       | 1683         |
| <b>PEAK HR FACTOR :</b> | 0.696               | 0.417   | 0.364   | 0.000   | 1.000        | 0.375   | 0.313   | 0.000   | 0.417      | 0.956   | 0.477   | 0.250   | 0.438      | 0.891   | 0.500   | 0.000   | 0.961        |
|                         | 0.536               |         |         |         | 0.429        |         |         |         | 0.949      |         |         |         | 0.903      |         |         |         |              |
| PM                      | 1<br>NL             | 1<br>NT | 0<br>NR | 0<br>NU | 1<br>SL      | 0<br>ST | 1<br>SR | 0<br>SU | 1<br>EL    | 2<br>ET | 0<br>ER | 0<br>EU | 1<br>WL    | 3<br>WT | 0<br>WR | 0<br>WU |              |
| 4:00 PM                 | 3                   | 1       | 4       | 0       | 0            | 0       | 1       | 0       | 0          | 272     | 3       | 0       | 2          | 116     | 0       | 1       | 403          |
| 4:15 PM                 | 13                  | 1       | 3       | 0       | 0            | 0       | 2       | 0       | 1          | 290     | 6       | 0       | 1          | 143     | 1       | 0       | 461          |
| 4:30 PM                 | 4                   | 0       | 1       | 0       | 1            | 0       | 2       | 0       | 1          | 287     | 3       | 1       | 1          | 141     | 1       | 0       | 443          |
| 4:45 PM                 | 3                   | 0       | 3       | 0       | 1            | 0       | 0       | 0       | 2          | 271     | 6       | 0       | 0          | 147     | 1       | 0       | 434          |
| 5:00 PM                 | 4                   | 0       | 1       | 0       | 1            | 0       | 1       | 0       | 2          | 244     | 2       | 0       | 0          | 118     | 1       | 0       | 374          |
| 5:15 PM                 | 3                   | 0       | 2       | 0       | 1            | 0       | 0       | 0       | 2          | 268     | 3       | 0       | 1          | 108     | 2       | 1       | 391          |
| 5:30 PM                 | 0                   | 1       | 0       | 0       | 4            | 0       | 1       | 0       | 2          | 256     | 3       | 1       | 0          | 101     | 0       | 0       | 369          |
| 5:45 PM                 | 2                   | 1       | 2       | 0       | 0            | 0       | 1       | 0       | 0          | 236     | 5       | 0       | 1          | 118     | 3       | 0       | 369          |
| <b>TOTAL VOLUMES :</b>  | 32                  | 4       | 16      | 0       | 8            | 0       | 8       | 0       | 10         | 2124    | 31      | 2       | 6          | 992     | 9       | 2       | 3244         |
| <b>APPROACH %'s :</b>   | 61.54%              | 7.69%   | 30.77%  | 0.00%   | 50.00%       | 0.00%   | 50.00%  | 0.00%   | 0.46%      | 98.02%  | 1.43%   | 0.09%   | 0.59%      | 98.32%  | 0.89%   | 0.20%   |              |
| <b>PEAK HR :</b>        | 04:00 PM - 05:00 PM |         |         |         |              |         |         |         |            |         |         |         |            |         |         |         | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 23                  | 2       | 11      | 0       | 2            | 0       | 5       | 0       | 4          | 1120    | 18      | 1       | 4          | 547     | 3       | 1       | 1741         |
| <b>PEAK HR FACTOR :</b> | 0.442               | 0.500   | 0.688   | 0.000   | 0.500        | 0.000   | 0.625   | 0.000   | 0.500      | 0.966   | 0.750   | 0.250   | 0.500      | 0.930   | 0.750   | 0.250   | 0.944        |
|                         | 0.529               |         |         |         | 0.583        |         |         |         | 0.962      |         |         |         | 0.938      |         |         |         |              |

# Sunflower St & Lambert Rd

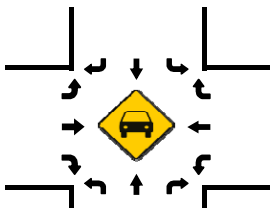
## Peak Hour Turning Movement Count

ID: 18-01231-003  
City: Brea

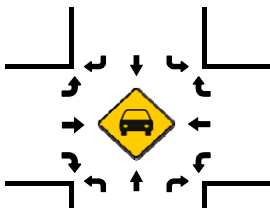
Day: Tuesday  
Date: 11/13/2018



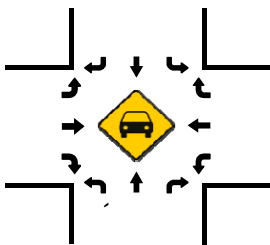
Total Vehicles (AM)



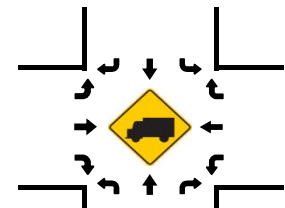
Total Vehicles (Noon)



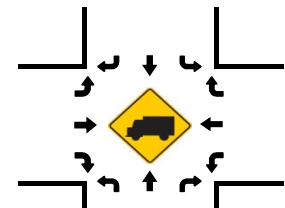
Total Vehicles (PM)



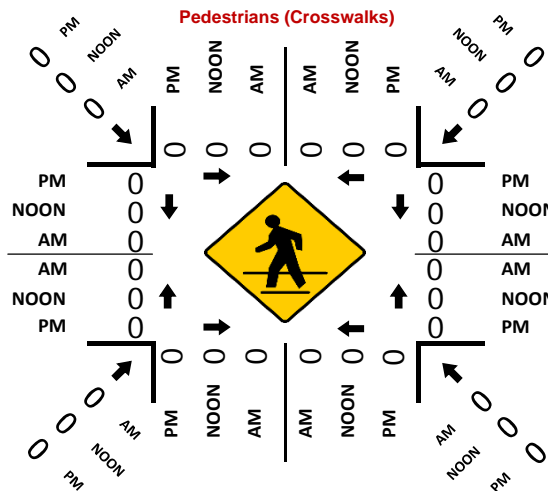
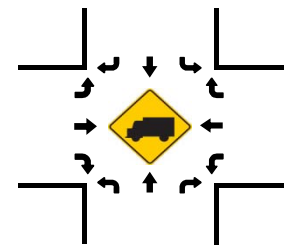
2axle (AM)



2axle (NOON)



2axle (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

Location: Valencia Ave & Lambert Rd/Carbon Canyon Rd  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-021  
 Date: 11/13/2018

**Total**

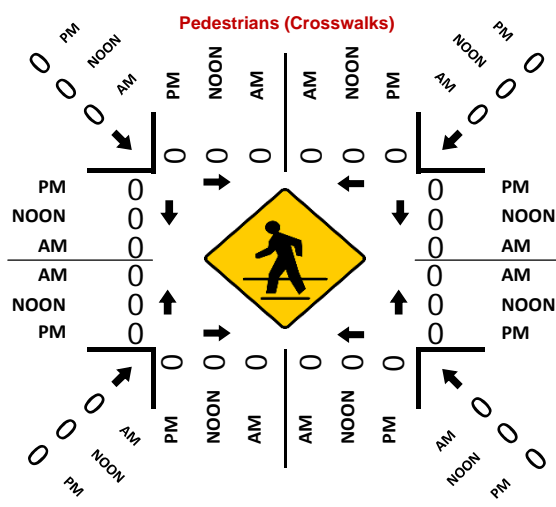
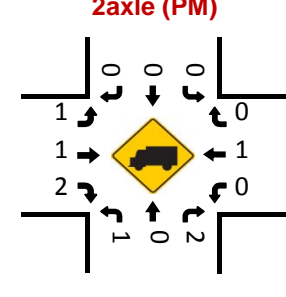
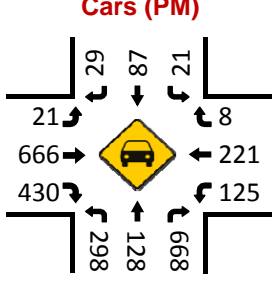
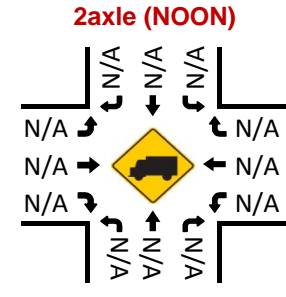
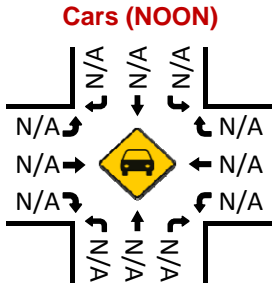
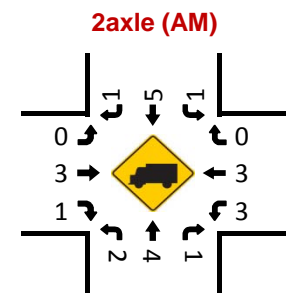
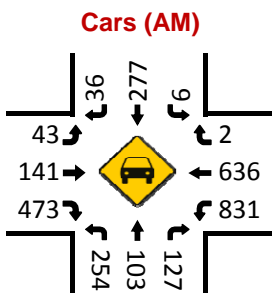
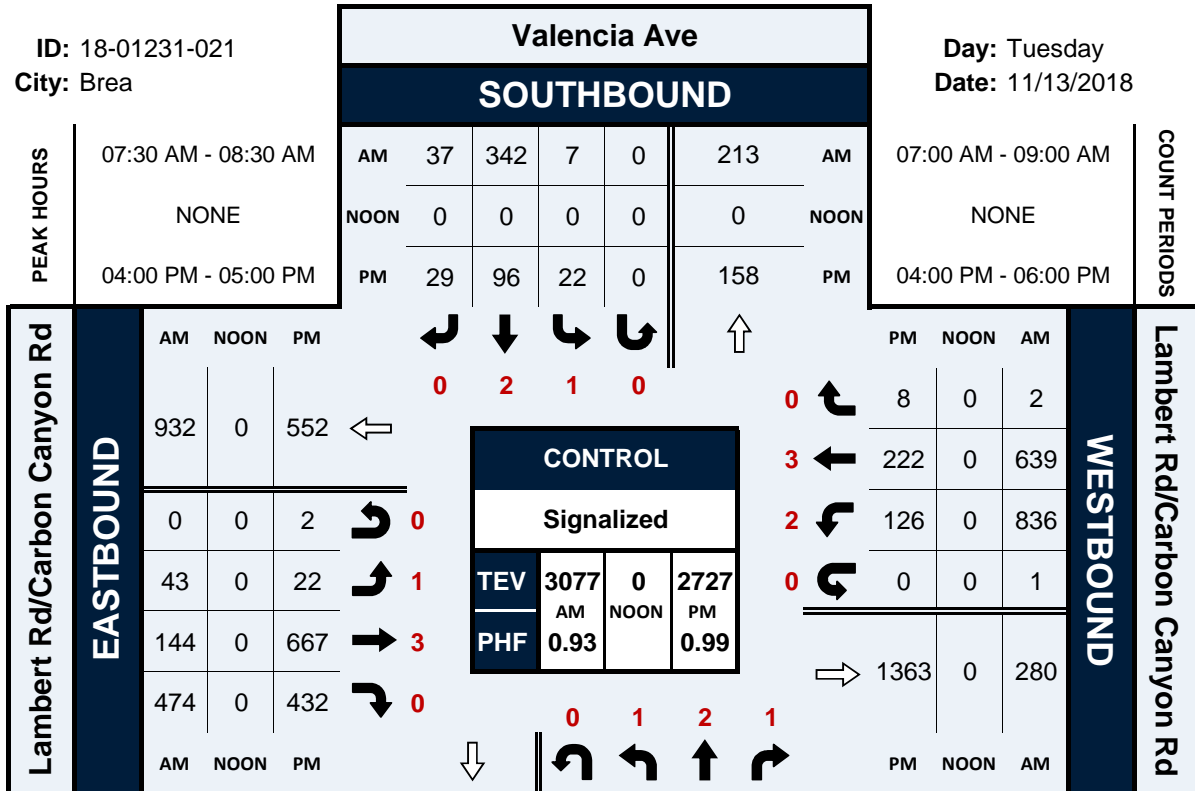
| NS/EW Streets:          | Valencia Ave        |        |        |       | Valencia Ave |        |        |       | Lambert Rd/Carbon Canyon Rd |        |        |       | Lambert Rd/Carbon Canyon Rd |        |       |       | TOTAL        |
|-------------------------|---------------------|--------|--------|-------|--------------|--------|--------|-------|-----------------------------|--------|--------|-------|-----------------------------|--------|-------|-------|--------------|
|                         | NORTHBOUND          |        |        |       | SOUTHBOUND   |        |        |       | EASTBOUND                   |        |        |       | WESTBOUND                   |        |       |       |              |
| AM                      | 1                   | 2      | 1      | 0     | 1            | 2      | 0      | 0     | 1                           | 3      | 0      | 0     | 2                           | 3      | 0     | 0     | TOTAL        |
|                         | NL                  | NT     | NR     | NU    | SL           | ST     | SR     | SU    | EL                          | ET     | ER     | EU    | WL                          | WT     | WR    | WU    |              |
| 7:00 AM                 | 59                  | 15     | 5      | 0     | 2            | 42     | 2      | 0     | 13                          | 25     | 115    | 0     | 237                         | 129    | 0     | 0     | 644          |
| 7:15 AM                 | 53                  | 27     | 22     | 0     | 1            | 49     | 1      | 0     | 3                           | 27     | 129    | 0     | 220                         | 133    | 2     | 0     | 667          |
| 7:30 AM                 | 58                  | 27     | 31     | 0     | 2            | 120    | 11     | 0     | 6                           | 25     | 132    | 0     | 214                         | 166    | 0     | 0     | 792          |
| 7:45 AM                 | 52                  | 42     | 33     | 0     | 2            | 127    | 16     | 0     | 14                          | 28     | 139    | 0     | 219                         | 151    | 0     | 0     | 823          |
| 8:00 AM                 | 76                  | 66     | 35     | 0     | 2            | 57     | 6      | 0     | 20                          | 37     | 100    | 0     | 199                         | 162    | 2     | 1     | 763          |
| 8:15 AM                 | 70                  | 33     | 29     | 0     | 1            | 38     | 4      | 0     | 3                           | 54     | 103    | 0     | 204                         | 160    | 0     | 0     | 699          |
| 8:30 AM                 | 59                  | 30     | 24     | 0     | 5            | 30     | 6      | 0     | 6                           | 32     | 89     | 0     | 218                         | 202    | 0     | 0     | 701          |
| 8:45 AM                 | 64                  | 32     | 20     | 0     | 2            | 59     | 2      | 0     | 14                          | 27     | 119    | 0     | 188                         | 174    | 3     | 1     | 705          |
| <b>TOTAL VOLUMES :</b>  | 491                 | 272    | 199    | 0     | 17           | 522    | 48     | 0     | 79                          | 255    | 926    | 0     | 1699                        | 1277   | 7     | 2     | 5794         |
| <b>APPROACH %'s :</b>   | 51.04%              | 28.27% | 20.69% | 0.00% | 2.90%        | 88.93% | 8.18%  | 0.00% | 6.27%                       | 20.24% | 73.49% | 0.00% | 56.92%                      | 42.78% | 0.23% | 0.07% |              |
| <b>PEAK HR :</b>        | 07:30 AM - 08:30 AM |        |        |       |              |        |        |       |                             |        |        |       |                             |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 256                 | 168    | 128    | 0     | 7            | 342    | 37     | 0     | 43                          | 144    | 474    | 0     | 836                         | 639    | 2     | 1     | 3077         |
| <b>PEAK HR FACTOR :</b> | 0.842               | 0.636  | 0.914  | 0.000 | 0.875        | 0.673  | 0.578  | 0.000 | 0.538                       | 0.667  | 0.853  | 0.000 | 0.954                       | 0.962  | 0.250 | 0.250 | 0.935        |
|                         | 0.780               |        |        |       | 0.666        |        |        |       | 0.913                       |        |        |       | 0.972                       |        |       |       |              |
| PM                      | 1                   | 2      | 1      | 0     | 1            | 2      | 0      | 0     | 1                           | 3      | 0      | 0     | 2                           | 3      | 0     | 0     | TOTAL        |
|                         | NL                  | NT     | NR     | NU    | SL           | ST     | SR     | SU    | EL                          | ET     | ER     | EU    | WL                          | WT     | WR    | WU    |              |
| 4:00 PM                 | 67                  | 26     | 186    | 0     | 7            | 38     | 13     | 0     | 8                           | 172    | 88     | 0     | 30                          | 41     | 2     | 0     | 678          |
| 4:15 PM                 | 87                  | 22     | 155    | 0     | 2            | 14     | 9      | 0     | 9                           | 190    | 105    | 1     | 32                          | 51     | 5     | 0     | 682          |
| 4:30 PM                 | 76                  | 29     | 178    | 0     | 4            | 19     | 5      | 0     | 5                           | 167    | 105    | 0     | 37                          | 60     | 1     | 0     | 686          |
| 4:45 PM                 | 69                  | 51     | 155    | 0     | 9            | 25     | 2      | 0     | 0                           | 138    | 134    | 1     | 27                          | 70     | 0     | 0     | 681          |
| 5:00 PM                 | 73                  | 42     | 167    | 0     | 9            | 23     | 8      | 0     | 2                           | 143    | 101    | 0     | 24                          | 44     | 2     | 0     | 638          |
| 5:15 PM                 | 56                  | 44     | 192    | 0     | 13           | 13     | 6      | 0     | 9                           | 139    | 125    | 0     | 26                          | 49     | 3     | 0     | 675          |
| 5:30 PM                 | 54                  | 41     | 158    | 0     | 6            | 23     | 5      | 0     | 3                           | 159    | 111    | 0     | 33                          | 46     | 0     | 0     | 639          |
| 5:45 PM                 | 65                  | 44     | 158    | 0     | 4            | 18     | 3      | 0     | 12                          | 140    | 87     | 0     | 31                          | 54     | 2     | 0     | 618          |
| <b>TOTAL VOLUMES :</b>  | 547                 | 299    | 1349   | 0     | 54           | 173    | 51     | 0     | 48                          | 1248   | 856    | 2     | 240                         | 415    | 15    | 0     | 5297         |
| <b>APPROACH %'s :</b>   | 24.92%              | 13.62% | 61.46% | 0.00% | 19.42%       | 62.23% | 18.35% | 0.00% | 2.23%                       | 57.94% | 39.74% | 0.09% | 35.82%                      | 61.94% | 2.24% | 0.00% |              |
| <b>PEAK HR :</b>        | 04:00 PM - 05:00 PM |        |        |       |              |        |        |       |                             |        |        |       |                             |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 299                 | 128    | 674    | 0     | 22           | 96     | 29     | 0     | 22                          | 667    | 432    | 2     | 126                         | 222    | 8     | 0     | 2727         |
| <b>PEAK HR FACTOR :</b> | 0.859               | 0.627  | 0.906  | 0.000 | 0.611        | 0.632  | 0.558  | 0.000 | 0.611                       | 0.878  | 0.806  | 0.500 | 0.851                       | 0.793  | 0.400 | 0.000 | 0.994        |
|                         | 0.973               |        |        |       | 0.634        |        |        |       | 0.920                       |        |        |       | 0.908                       |        |       |       |              |

# Valencia Ave & Lambert Rd/Carbon Canyon Rd

## Peak Hour Turning Movement Count

ID: 18-01231-021  
City: Brea

Day: Tuesday  
Date: 11/13/2018



National Data & Surveying Services

# Intersection Turning Movement Count

Location: Santa Fe Rd & Carbon Canyon Rd  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-004  
 Date: 11/13/2018

**Total**

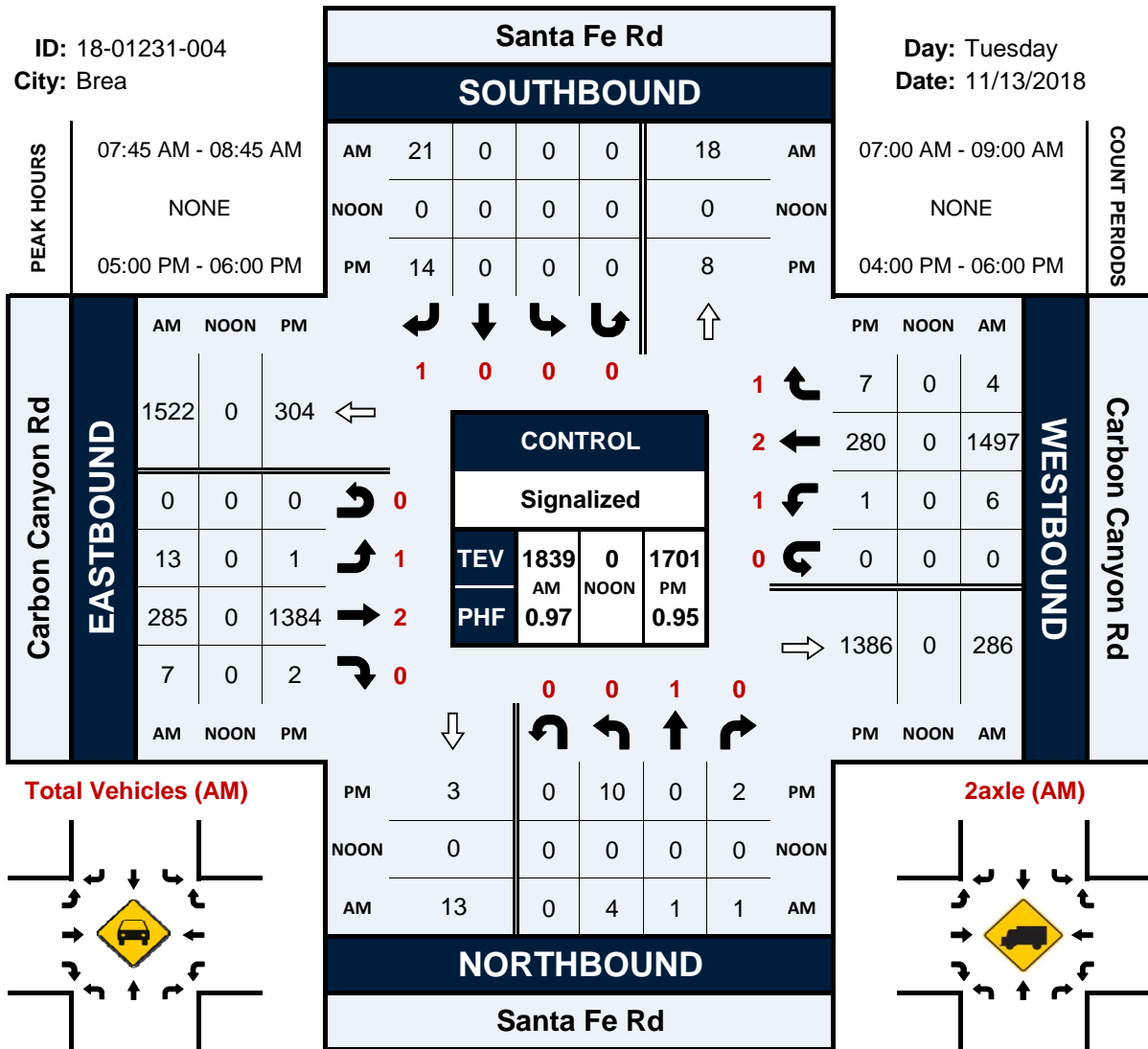
| NS/EW Streets:          | Santa Fe Rd         |        |        |       | Santa Fe Rd |       |         |       | Carbon Canyon Rd |        |       |       | Carbon Canyon Rd |        |       |       | TOTAL        |
|-------------------------|---------------------|--------|--------|-------|-------------|-------|---------|-------|------------------|--------|-------|-------|------------------|--------|-------|-------|--------------|
|                         | NORTHBOUND          |        |        |       | SOUTHBOUND  |       |         |       | EASTBOUND        |        |       |       | WESTBOUND        |        |       |       |              |
| AM                      | NL                  | NT     | NR     | NU    | SL          | ST    | SR      | SU    | EL               | ET     | ER    | EU    | WL               | WT     | WR    | WU    | TOTAL        |
| 7:00 AM                 | 0                   | 0      | 0      | 0     | 0           | 0     | 0       | 0     | 2                | 47     | 1     | 0     | 0                | 371    | 0     | 0     | 421          |
| 7:15 AM                 | 0                   | 0      | 0      | 0     | 0           | 0     | 7       | 0     | 1                | 46     | 1     | 0     | 0                | 361    | 1     | 0     | 417          |
| 7:30 AM                 | 0                   | 0      | 0      | 0     | 0           | 0     | 11      | 0     | 3                | 48     | 2     | 0     | 0                | 363    | 0     | 0     | 427          |
| 7:45 AM                 | 0                   | 0      | 0      | 0     | 0           | 0     | 8       | 0     | 7                | 65     | 1     | 0     | 2                | 370    | 1     | 0     | 454          |
| 8:00 AM                 | 0                   | 0      | 0      | 0     | 0           | 0     | 7       | 0     | 2                | 76     | 1     | 0     | 4                | 364    | 0     | 0     | 454          |
| 8:15 AM                 | 2                   | 0      | 1      | 0     | 0           | 0     | 3       | 0     | 1                | 79     | 3     | 0     | 0                | 384    | 2     | 0     | 475          |
| 8:30 AM                 | 2                   | 1      | 0      | 0     | 0           | 0     | 3       | 0     | 3                | 65     | 2     | 0     | 0                | 379    | 1     | 0     | 456          |
| 8:45 AM                 | 1                   | 0      | 1      | 0     | 0           | 0     | 2       | 0     | 2                | 48     | 4     | 0     | 2                | 366    | 1     | 0     | 427          |
| <b>TOTAL VOLUMES :</b>  | 5                   | 1      | 2      | 0     | 0           | 0     | 41      | 0     | 21               | 474    | 15    | 0     | 8                | 2958   | 6     | 0     | 3531         |
| <b>APPROACH %'s :</b>   | 62.50%              | 12.50% | 25.00% | 0.00% | 0.00%       | 0.00% | 100.00% | 0.00% | 4.12%            | 92.94% | 2.94% | 0.00% | 0.27%            | 99.53% | 0.20% | 0.00% |              |
| <b>PEAK HR :</b>        | 07:45 AM - 08:45 AM |        |        |       |             |       |         |       |                  |        |       |       |                  |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 4                   | 1      | 1      | 0     | 0           | 0     | 21      | 0     | 13               | 285    | 7     | 0     | 6                | 1497   | 4     | 0     | 1839         |
| <b>PEAK HR FACTOR :</b> | 0.500               | 0.250  | 0.250  | 0.000 | 0.000       | 0.000 | 0.656   | 0.000 | 0.464            | 0.902  | 0.583 | 0.000 | 0.375            | 0.975  | 0.500 | 0.000 | 0.968        |
|                         | 0.500               |        |        |       | 0.656       |       |         |       | 0.919            |        |       |       | 0.976            |        |       |       |              |
| PM                      | NL                  | NT     | NR     | NU    | SL          | ST    | SR      | SU    | EL               | ET     | ER    | EU    | WL               | WT     | WR    | WU    | TOTAL        |
| 4:00 PM                 | 0                   | 0      | 2      | 0     | 0           | 0     | 2       | 0     | 3                | 314    | 5     | 0     | 0                | 70     | 0     | 0     | 396          |
| 4:15 PM                 | 1                   | 0      | 0      | 0     | 0           | 0     | 3       | 0     | 0                | 296    | 1     | 0     | 0                | 80     | 0     | 0     | 381          |
| 4:30 PM                 | 7                   | 0      | 2      | 0     | 1           | 0     | 8       | 0     | 2                | 308    | 2     | 0     | 1                | 80     | 0     | 0     | 411          |
| 4:45 PM                 | 6                   | 0      | 0      | 0     | 0           | 0     | 5       | 0     | 0                | 293    | 3     | 0     | 0                | 91     | 2     | 0     | 400          |
| 5:00 PM                 | 3                   | 0      | 2      | 0     | 0           | 0     | 0       | 0     | 0                | 310    | 1     | 0     | 0                | 65     | 0     | 0     | 381          |
| 5:15 PM                 | 4                   | 0      | 0      | 0     | 0           | 0     | 7       | 0     | 0                | 378    | 0     | 0     | 1                | 58     | 2     | 0     | 450          |
| 5:30 PM                 | 0                   | 0      | 0      | 0     | 0           | 0     | 4       | 0     | 1                | 342    | 1     | 0     | 0                | 72     | 3     | 0     | 423          |
| 5:45 PM                 | 3                   | 0      | 0      | 0     | 0           | 0     | 3       | 0     | 0                | 354    | 0     | 0     | 0                | 85     | 2     | 0     | 447          |
| <b>TOTAL VOLUMES :</b>  | 24                  | 0      | 6      | 0     | 1           | 0     | 32      | 0     | 6                | 2595   | 13    | 0     | 2                | 601    | 9     | 0     | 3289         |
| <b>APPROACH %'s :</b>   | 80.00%              | 0.00%  | 20.00% | 0.00% | 3.03%       | 0.00% | 96.97%  | 0.00% | 0.23%            | 99.27% | 0.50% | 0.00% | 0.33%            | 98.20% | 1.47% | 0.00% |              |
| <b>PEAK HR :</b>        | 05:00 PM - 06:00 PM |        |        |       |             |       |         |       |                  |        |       |       |                  |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 10                  | 0      | 2      | 0     | 0           | 0     | 14      | 0     | 1                | 1384   | 2     | 0     | 1                | 280    | 7     | 0     | 1701         |
| <b>PEAK HR FACTOR :</b> | 0.625               | 0.000  | 0.250  | 0.000 | 0.000       | 0.000 | 0.500   | 0.000 | 0.250            | 0.915  | 0.500 | 0.000 | 0.250            | 0.824  | 0.583 | 0.000 | 0.945        |
|                         | 0.600               |        |        |       | 0.500       |       |         |       | 0.917            |        |       |       | 0.828            |        |       |       |              |

# Santa Fe Rd & Carbon Canyon Rd

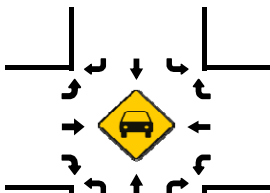
## Peak Hour Turning Movement Count

ID: 18-01231-004  
City: Brea

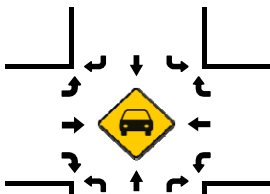
Day: Tuesday  
Date: 11/13/2018



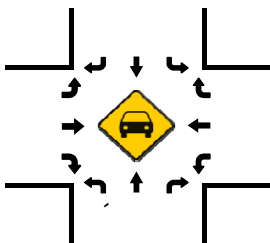
Total Vehicles (AM)



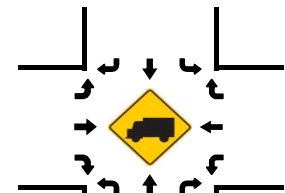
Total Vehicles (Noon)



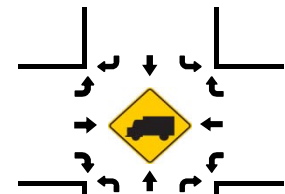
Total Vehicles (PM)



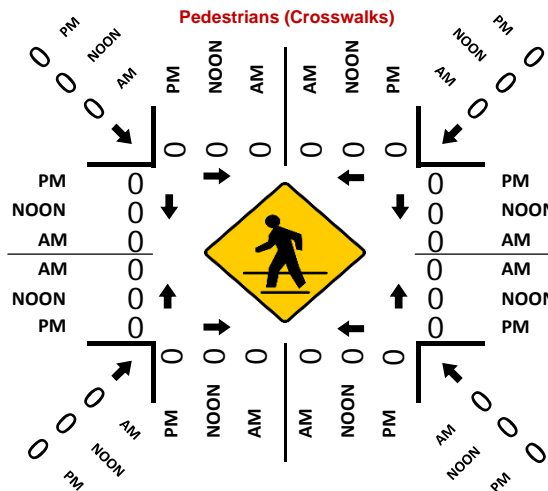
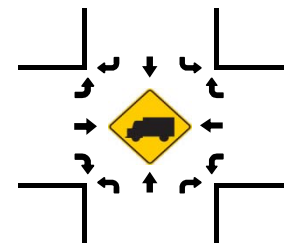
2axle (AM)



2axle (NOON)



2axle (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

Location: State College Blvd & Birch St  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-005  
 Date: 11/13/2018

**Total**

| NS/EW Streets:          | State College Blvd  |        |        |       | State College Blvd |        |        |       | Birch St  |        |        |       | Birch St  |        |        |       | TOTAL        |
|-------------------------|---------------------|--------|--------|-------|--------------------|--------|--------|-------|-----------|--------|--------|-------|-----------|--------|--------|-------|--------------|
|                         | NORTHBOUND          |        |        |       | SOUTHBOUND         |        |        |       | EASTBOUND |        |        |       | WESTBOUND |        |        |       |              |
| AM                      | NL                  | NT     | NR     | NU    | SL                 | ST     | SR     | SU    | EL        | ET     | ER     | EU    | WL        | WT     | WR     | WU    | TOTAL        |
| 7:00 AM                 | 12                  | 23     | 11     | 0     | 116                | 168    | 22     | 0     | 16        | 95     | 7      | 0     | 20        | 76     | 40     | 0     | 606          |
| 7:15 AM                 | 21                  | 19     | 19     | 0     | 131                | 235    | 13     | 0     | 9         | 89     | 10     | 0     | 20        | 85     | 43     | 0     | 694          |
| 7:30 AM                 | 14                  | 22     | 24     | 0     | 160                | 220    | 30     | 0     | 20        | 137    | 14     | 0     | 10        | 114    | 58     | 0     | 823          |
| 7:45 AM                 | 20                  | 34     | 27     | 0     | 184                | 144    | 49     | 0     | 23        | 121    | 8      | 0     | 19        | 172    | 88     | 0     | 889          |
| 8:00 AM                 | 16                  | 37     | 20     | 0     | 117                | 134    | 45     | 0     | 18        | 126    | 13     | 0     | 23        | 153    | 68     | 0     | 770          |
| 8:15 AM                 | 17                  | 35     | 17     | 0     | 99                 | 104    | 44     | 0     | 27        | 84     | 10     | 0     | 34        | 137    | 55     | 0     | 663          |
| 8:30 AM                 | 11                  | 39     | 15     | 0     | 64                 | 81     | 51     | 0     | 28        | 65     | 11     | 0     | 18        | 127    | 43     | 0     | 553          |
| 8:45 AM                 | 20                  | 33     | 9      | 0     | 73                 | 84     | 59     | 0     | 12        | 82     | 17     | 0     | 23        | 117    | 43     | 0     | 572          |
| <b>TOTAL VOLUMES :</b>  | 131                 | 242    | 142    | 0     | 944                | 1170   | 313    | 0     | 153       | 799    | 90     | 0     | 167       | 981    | 438    | 0     | 5570         |
| <b>APPROACH %'s :</b>   | 25.44%              | 46.99% | 27.57% | 0.00% | 38.90%             | 48.21% | 12.90% | 0.00% | 14.68%    | 76.68% | 8.64%  | 0.00% | 10.53%    | 61.85% | 27.62% | 0.00% |              |
| <b>PEAK HR :</b>        | 07:15 AM - 08:15 AM |        |        |       |                    |        |        |       |           |        |        |       |           |        |        |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 71                  | 112    | 90     | 0     | 592                | 733    | 137    | 0     | 70        | 473    | 45     | 0     | 72        | 524    | 257    | 0     | 3176         |
| <b>PEAK HR FACTOR :</b> | 0.845               | 0.757  | 0.833  | 0.000 | 0.804              | 0.780  | 0.699  | 0.000 | 0.761     | 0.863  | 0.804  | 0.000 | 0.783     | 0.762  | 0.730  | 0.000 | 0.893        |
|                         | 0.843               |        |        |       | 0.891              |        |        |       | 0.860     |        |        |       | 0.764     |        |        |       |              |
| PM                      | NL                  | NT     | NR     | NU    | SL                 | ST     | SR     | SU    | EL        | ET     | ER     | EU    | WL        | WT     | WR     | WU    | TOTAL        |
| 4:00 PM                 | 27                  | 67     | 34     | 0     | 62                 | 71     | 55     | 0     | 54        | 139    | 44     | 0     | 28        | 163    | 82     | 0     | 826          |
| 4:15 PM                 | 33                  | 83     | 36     | 0     | 67                 | 65     | 64     | 0     | 43        | 153    | 29     | 0     | 33        | 150    | 102    | 0     | 858          |
| 4:30 PM                 | 33                  | 71     | 47     | 0     | 70                 | 79     | 58     | 0     | 32        | 138    | 31     | 0     | 27        | 200    | 116    | 0     | 902          |
| 4:45 PM                 | 31                  | 75     | 35     | 0     | 87                 | 72     | 58     | 0     | 35        | 161    | 29     | 0     | 33        | 238    | 145    | 0     | 999          |
| 5:00 PM                 | 24                  | 75     | 43     | 0     | 62                 | 72     | 65     | 0     | 48        | 170    | 46     | 0     | 33        | 231    | 153    | 0     | 1022         |
| 5:15 PM                 | 31                  | 85     | 41     | 0     | 70                 | 83     | 56     | 0     | 43        | 184    | 30     | 0     | 29        | 223    | 146    | 0     | 1021         |
| 5:30 PM                 | 45                  | 92     | 27     | 0     | 72                 | 73     | 64     | 1     | 57        | 184    | 41     | 0     | 36        | 203    | 123    | 0     | 1018         |
| 5:45 PM                 | 34                  | 84     | 34     | 0     | 54                 | 71     | 77     | 2     | 48        | 158    | 39     | 0     | 46        | 168    | 101    | 0     | 916          |
| <b>TOTAL VOLUMES :</b>  | 258                 | 632    | 297    | 0     | 544                | 586    | 497    | 3     | 360       | 1287   | 289    | 0     | 265       | 1576   | 968    | 0     | 7562         |
| <b>APPROACH %'s :</b>   | 21.74%              | 53.24% | 25.02% | 0.00% | 33.37%             | 35.95% | 30.49% | 0.18% | 18.60%    | 66.48% | 14.93% | 0.00% | 9.43%     | 56.11% | 34.46% | 0.00% |              |
| <b>PEAK HR :</b>        | 04:45 PM - 05:45 PM |        |        |       |                    |        |        |       |           |        |        |       |           |        |        |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 131                 | 327    | 146    | 0     | 291                | 300    | 243    | 1     | 183       | 699    | 146    | 0     | 131       | 895    | 567    | 0     | 4060         |
| <b>PEAK HR FACTOR :</b> | 0.728               | 0.889  | 0.849  | 0.000 | 0.836              | 0.904  | 0.935  | 0.250 | 0.803     | 0.950  | 0.793  | 0.000 | 0.910     | 0.940  | 0.926  | 0.000 | 0.993        |
|                         | 0.921               |        |        |       | 0.962              |        |        |       | 0.911     |        |        |       | 0.955     |        |        |       |              |

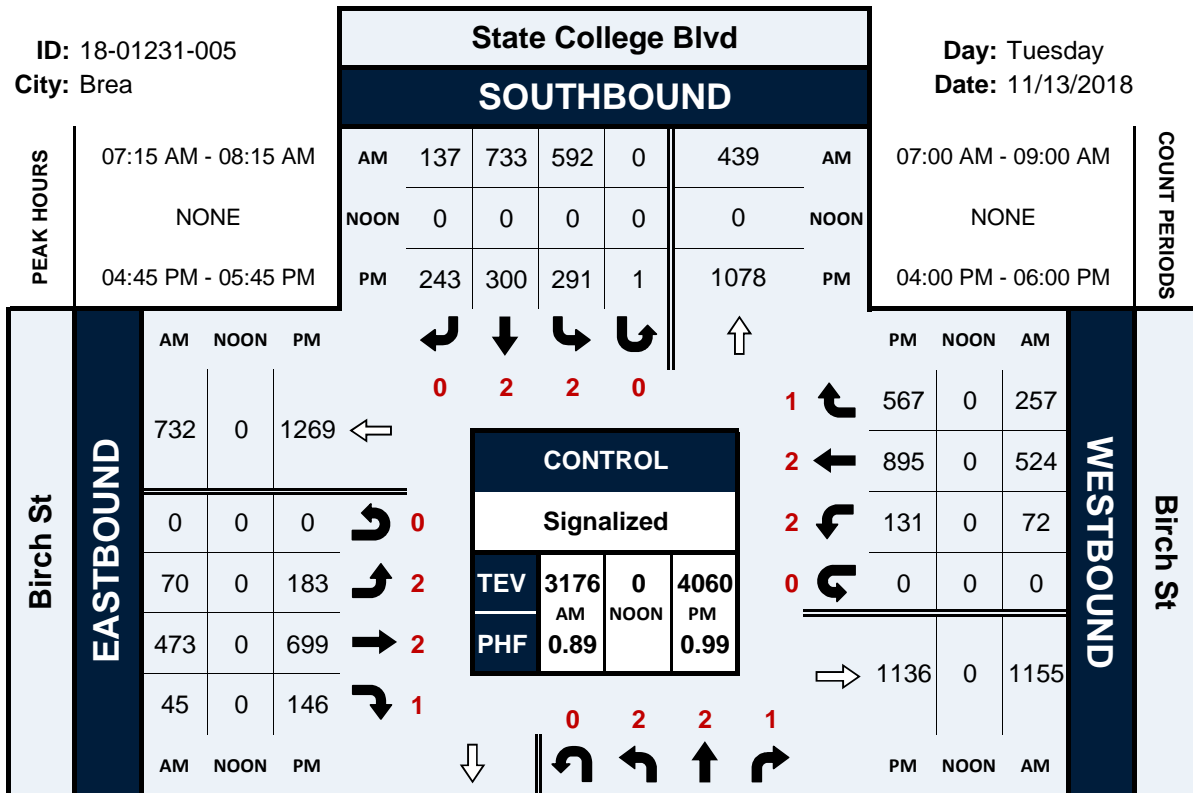


# State College Blvd & Birch St

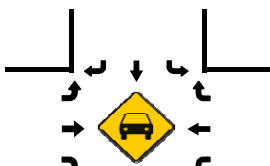
## Peak Hour Turning Movement Count

ID: 18-01231-005  
City: Brea

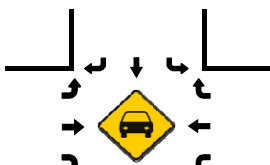
Day: Tuesday  
Date: 11/13/2018



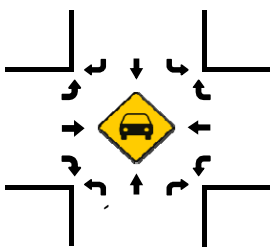
Total Vehicles (AM)



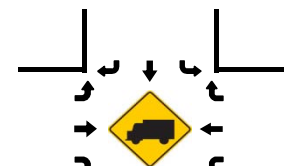
Total Vehicles (Noon)



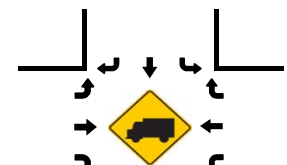
Total Vehicles (PM)



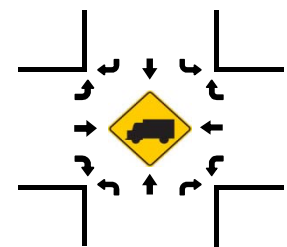
2axle (AM)



2axle (NOON)



2axle (PM)

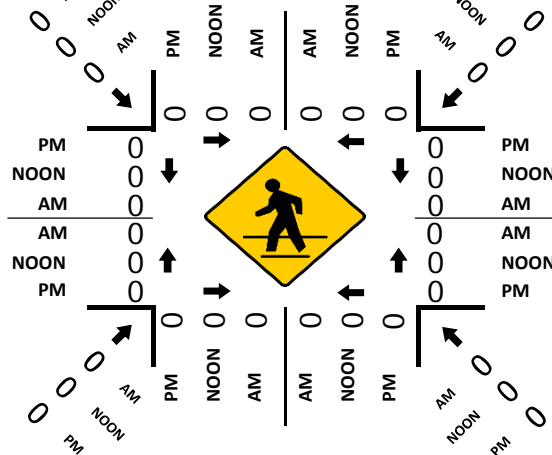


|      |     |   |     |     |     |      |
|------|-----|---|-----|-----|-----|------|
| PM   | 577 | 0 | 131 | 327 | 146 | PM   |
| NOON | 0   | 0 | 0   | 0   | 0   | NOON |
| AM   | 850 | 0 | 71  | 112 | 90  | AM   |

### NORTHBOUND

### State College Blvd

#### Pedestrians (Crosswalks)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: S Associated Rd & Birch St  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-006  
 Date: 11/13/2018

### Total

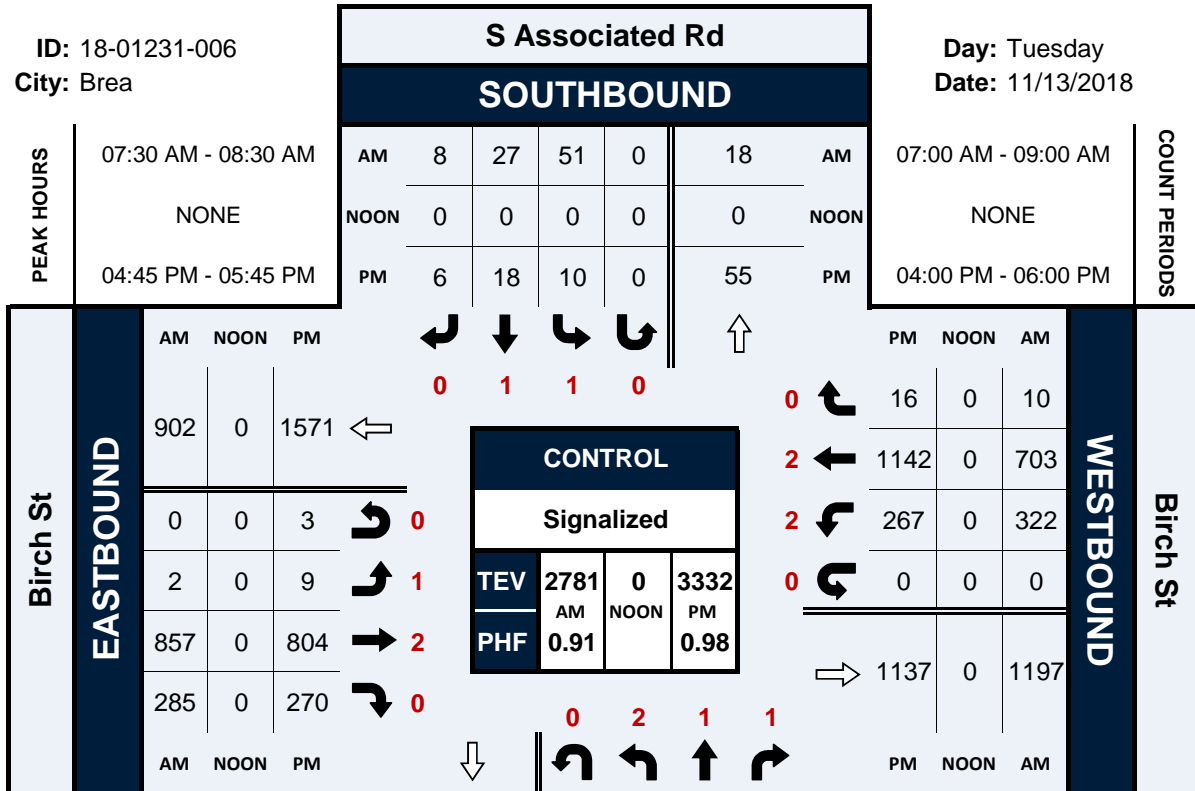
| NS/EW Streets:          | S Associated Rd     |       |        |       | S Associated Rd |        |        |       | Birch St  |        |        |       | Birch St  |        |       |       | TOTAL        |
|-------------------------|---------------------|-------|--------|-------|-----------------|--------|--------|-------|-----------|--------|--------|-------|-----------|--------|-------|-------|--------------|
|                         | NORTHBOUND          |       |        |       | SOUTHBOUND      |        |        |       | EASTBOUND |        |        |       | WESTBOUND |        |       |       |              |
| AM                      | NL                  | NT    | NR     | NU    | SL              | ST     | SR     | SU    | EL        | ET     | ER     | EU    | WL        | WT     | WR    | WU    | TOTAL        |
| 7:00 AM                 | 20                  | 0     | 51     | 4     | 5               | 4      | 0      | 0     | 0         | 155    | 71     | 0     | 74        | 88     | 1     | 0     | 473          |
| 7:15 AM                 | 23                  | 0     | 45     | 0     | 10              | 4      | 5      | 0     | 0         | 157    | 73     | 0     | 66        | 104    | 0     | 0     | 487          |
| 7:30 AM                 | 40                  | 1     | 58     | 7     | 9               | 13     | 3      | 0     | 1         | 220    | 86     | 0     | 80        | 134    | 4     | 0     | 656          |
| 7:45 AM                 | 50                  | 1     | 66     | 6     | 14              | 6      | 1      | 0     | 0         | 249    | 85     | 0     | 77        | 206    | 0     | 0     | 761          |
| 8:00 AM                 | 47                  | 3     | 69     | 10    | 6               | 3      | 2      | 0     | 0         | 228    | 68     | 0     | 84        | 194    | 1     | 0     | 715          |
| 8:15 AM                 | 54                  | 1     | 96     | 7     | 22              | 5      | 2      | 0     | 1         | 160    | 46     | 0     | 81        | 169    | 5     | 0     | 649          |
| 8:30 AM                 | 53                  | 1     | 47     | 8     | 5               | 3      | 2      | 0     | 3         | 99     | 52     | 0     | 75        | 120    | 3     | 0     | 471          |
| 8:45 AM                 | 43                  | 0     | 41     | 6     | 5               | 5      | 2      | 0     | 1         | 101    | 60     | 0     | 45        | 138    | 2     | 0     | 449          |
| <b>TOTAL VOLUMES :</b>  | 330                 | 7     | 473    | 48    | 76              | 43     | 17     | 0     | 6         | 1369   | 541    | 0     | 582       | 1153   | 16    | 0     | 4661         |
| <b>APPROACH %'s :</b>   | 38.46%              | 0.82% | 55.13% | 5.59% | 55.88%          | 31.62% | 12.50% | 0.00% | 0.31%     | 71.45% | 28.24% | 0.00% | 33.24%    | 65.85% | 0.91% | 0.00% |              |
| <b>PEAK HR :</b>        | 07:30 AM - 08:30 AM |       |        |       |                 |        |        |       |           |        |        |       |           |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 191                 | 6     | 289    | 30    | 51              | 27     | 8      | 0     | 2         | 857    | 285    | 0     | 322       | 703    | 10    | 0     | 2781         |
| <b>PEAK HR FACTOR :</b> | 0.884               | 0.500 | 0.753  | 0.750 | 0.580           | 0.519  | 0.667  | 0.000 | 0.500     | 0.860  | 0.828  | 0.000 | 0.958     | 0.853  | 0.500 | 0.000 | 0.914        |
|                         | 0.816               |       |        |       | 0.741           |        |        |       | 0.856     |        |        |       | 0.914     |        |       |       |              |
| PM                      | NL                  | NT    | NR     | NU    | SL              | ST     | SR     | SU    | EL        | ET     | ER     | EU    | WL        | WT     | WR    | WU    | TOTAL        |
| 4:00 PM                 | 81                  | 4     | 56     | 2     | 2               | 2      | 2      | 0     | 0         | 167    | 58     | 1     | 66        | 199    | 6     | 0     | 646          |
| 4:15 PM                 | 86                  | 2     | 68     | 2     | 1               | 2      | 2      | 0     | 0         | 186    | 62     | 0     | 59        | 194    | 3     | 0     | 667          |
| 4:30 PM                 | 99                  | 4     | 67     | 3     | 3               | 1      | 1      | 0     | 0         | 200    | 60     | 0     | 60        | 260    | 5     | 0     | 763          |
| 4:45 PM                 | 124                 | 7     | 74     | 5     | 3               | 3      | 1      | 0     | 5         | 196    | 66     | 0     | 60        | 276    | 5     | 0     | 825          |
| 5:00 PM                 | 120                 | 9     | 77     | 4     | 2               | 6      | 2      | 0     | 1         | 196    | 76     | 1     | 76        | 279    | 5     | 0     | 854          |
| 5:15 PM                 | 95                  | 7     | 87     | 2     | 3               | 5      | 2      | 0     | 1         | 209    | 61     | 2     | 77        | 299    | 2     | 0     | 852          |
| 5:30 PM                 | 81                  | 7     | 85     | 3     | 2               | 4      | 1      | 0     | 2         | 203    | 67     | 0     | 54        | 288    | 4     | 0     | 801          |
| 5:45 PM                 | 80                  | 5     | 74     | 3     | 5               | 4      | 2      | 0     | 3         | 181    | 53     | 0     | 57        | 217    | 6     | 0     | 690          |
| <b>TOTAL VOLUMES :</b>  | 766                 | 45    | 588    | 24    | 21              | 27     | 13     | 0     | 12        | 1538   | 503    | 4     | 509       | 2012   | 36    | 0     | 6098         |
| <b>APPROACH %'s :</b>   | 53.83%              | 3.16% | 41.32% | 1.69% | 34.43%          | 44.26% | 21.31% | 0.00% | 0.58%     | 74.77% | 24.45% | 0.19% | 19.91%    | 78.69% | 1.41% | 0.00% |              |
| <b>PEAK HR :</b>        | 04:45 PM - 05:45 PM |       |        |       |                 |        |        |       |           |        |        |       |           |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 420                 | 30    | 323    | 14    | 10              | 18     | 6      | 0     | 9         | 804    | 270    | 3     | 267       | 1142   | 16    | 0     | 3332         |
| <b>PEAK HR FACTOR :</b> | 0.847               | 0.833 | 0.928  | 0.700 | 0.833           | 0.750  | 0.750  | 0.000 | 0.450     | 0.962  | 0.888  | 0.375 | 0.867     | 0.955  | 0.800 | 0.000 | 0.975        |
|                         | 0.937               |       |        |       | 0.850           |        |        |       | 0.991     |        |        |       | 0.942     |        |       |       |              |

# S Associated Rd & Birch St

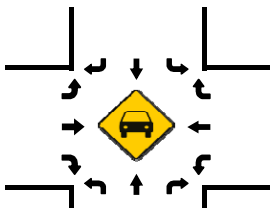
## Peak Hour Turning Movement Count

ID: 18-01231-006  
City: Brea

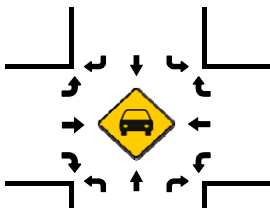
Day: Tuesday  
Date: 11/13/2018



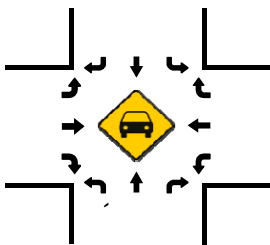
Total Vehicles (AM)



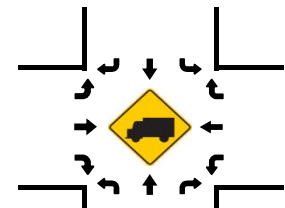
Total Vehicles (Noon)



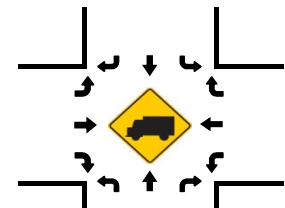
Total Vehicles (PM)



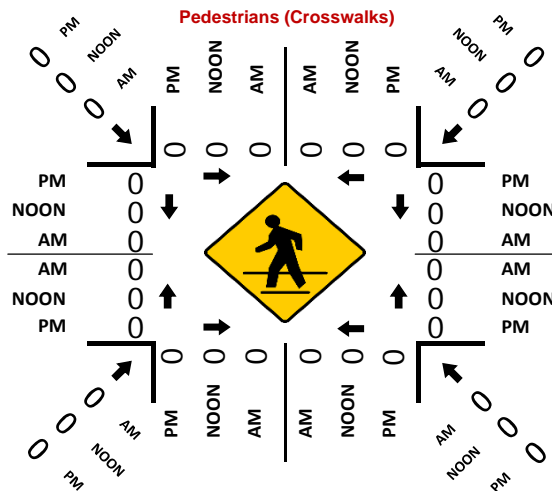
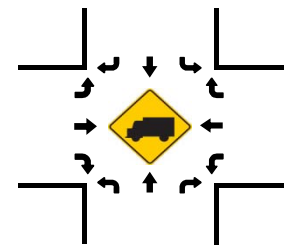
2axle (AM)



2axle (NOON)



2axle (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: N Associated Rd & Birch St  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-007  
 Date: 11/13/2018

### Total

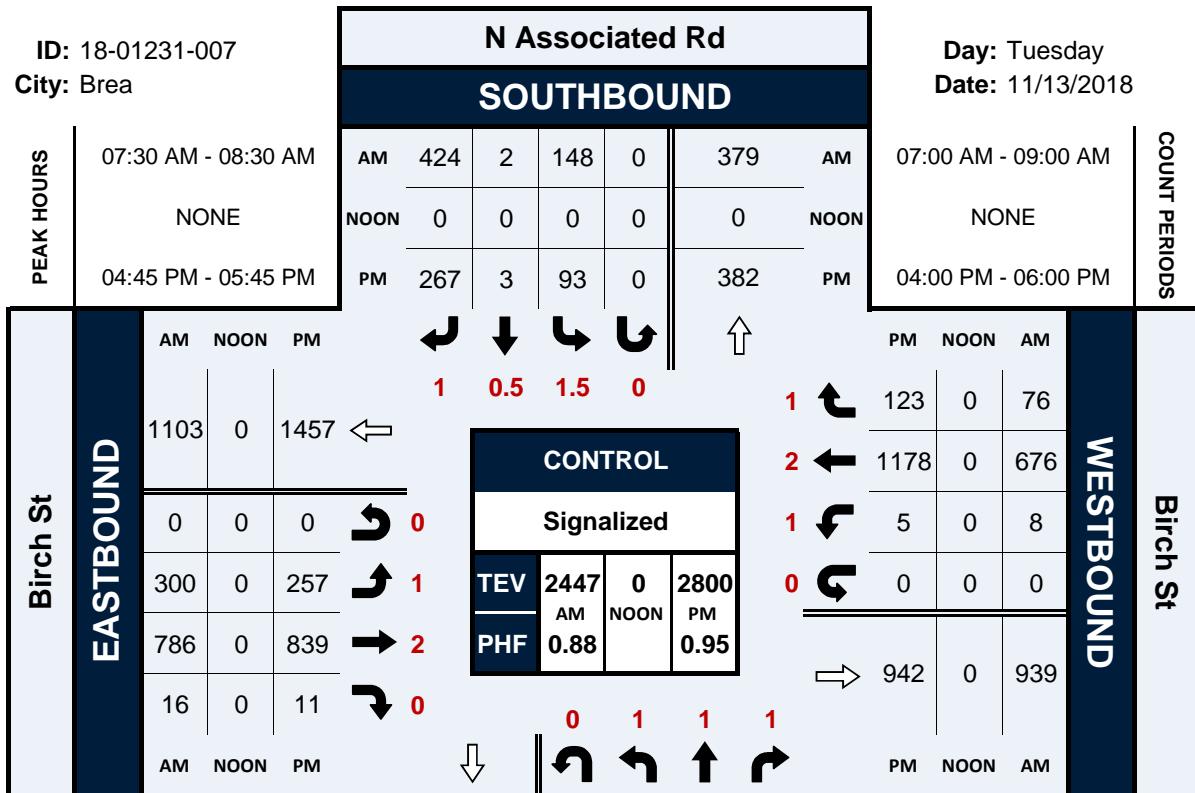
| NS/EW Streets:          | N Associated Rd     |        |        |       | N Associated Rd |       |        |       | Birch St  |        |       |       | Birch St  |        |        |       | TOTAL |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |       |
|-------------------------|---------------------|--------|--------|-------|-----------------|-------|--------|-------|-----------|--------|-------|-------|-----------|--------|--------|-------|-------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-------|
|                         | NORTHBOUND          |        |        |       | SOUTHBOUND      |       |        |       | EASTBOUND |        |       |       | WESTBOUND |        |        |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |       |
| AM                      | 1                   | 1      | 1      | 0     | 1.5             | 0.5   | 1      | 0     | 1         | 2      | 0     | 0     | 1         | 2      | 1      | 0     | NL    | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM                 | 3                   | 0      | 0      | 0     | 23              | 2     | 72     | 0     | 22        | 183    | 3     | 0     | 1         | 92     | 11     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 412   |
| 7:15 AM                 | 0                   | 0      | 0      | 0     | 15              | 1     | 60     | 0     | 44        | 167    | 0     | 0     | 4         | 117    | 9      | 1     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 418   |
| 7:30 AM                 | 1                   | 1      | 0      | 0     | 22              | 0     | 108    | 0     | 85        | 201    | 1     | 0     | 1         | 140    | 28     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 588   |
| 7:45 AM                 | 1                   | 0      | 0      | 0     | 55              | 0     | 114    | 0     | 79        | 225    | 6     | 0     | 3         | 190    | 23     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 696   |
| 8:00 AM                 | 1                   | 2      | 2      | 0     | 31              | 2     | 101    | 0     | 55        | 203    | 3     | 0     | 3         | 181    | 13     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 597   |
| 8:15 AM                 | 0                   | 0      | 3      | 0     | 40              | 0     | 101    | 0     | 81        | 157    | 6     | 0     | 1         | 165    | 12     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 566   |
| 8:30 AM                 | 0                   | 0      | 1      | 0     | 19              | 0     | 67     | 0     | 15        | 123    | 5     | 0     | 1         | 132    | 14     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 377   |
| 8:45 AM                 | 0                   | 1      | 1      | 0     | 16              | 2     | 52     | 0     | 25        | 108    | 2     | 0     | 0         | 143    | 6      | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 356   |
| <b>TOTAL VOLUMES :</b>  | 6                   | 4      | 7      | 0     | 221             | 7     | 675    | 0     | 406       | 1367   | 26    | 0     | 14        | 1160   | 116    | 1     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4010  |
| <b>APPROACH %'s :</b>   | 35.29%              | 23.53% | 41.18% | 0.00% | 24.47%          | 0.78% | 74.75% | 0.00% | 22.57%    | 75.99% | 1.45% | 0.00% | 1.08%     | 89.85% | 8.99%  | 0.08% |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |       |
| <b>PEAK HR :</b>        | 07:30 AM - 08:30 AM |        |        |       |                 |       |        |       |           |        |       |       |           |        |        |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | TOTAL |
| <b>PEAK HR VOL :</b>    | 3                   | 3      | 5      | 0     | 148             | 2     | 424    | 0     | 300       | 786    | 16    | 0     | 8         | 676    | 76     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2447  |
| <b>PEAK HR FACTOR :</b> | 0.750               | 0.375  | 0.417  | 0.000 | 0.673           | 0.250 | 0.930  | 0.000 | 0.882     | 0.873  | 0.667 | 0.000 | 0.667     | 0.889  | 0.679  | 0.000 |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.879 |
|                         |                     |        |        |       |                 |       |        |       |           |        |       |       |           |        |        |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |       |
| PM                      | 1                   | 1      | 1      | 0     | 1.5             | 0.5   | 1      | 0     | 1         | 2      | 0     | 0     | 1         | 2      | 1      | 0     | NL    | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM                 | 3                   | 0      | 4      | 0     | 20              | 1     | 61     | 0     | 51        | 174    | 0     | 0     | 1         | 202    | 22     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 539   |
| 4:15 PM                 | 4                   | 1      | 1      | 0     | 22              | 2     | 58     | 0     | 41        | 206    | 2     | 0     | 1         | 204    | 34     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 576   |
| 4:30 PM                 | 1                   | 2      | 5      | 0     | 24              | 1     | 66     | 0     | 54        | 190    | 5     | 0     | 2         | 271    | 38     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 659   |
| 4:45 PM                 | 1                   | 1      | 2      | 0     | 22              | 0     | 50     | 0     | 61        | 189    | 1     | 0     | 1         | 287    | 34     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 649   |
| 5:00 PM                 | 5                   | 0      | 3      | 0     | 25              | 1     | 67     | 0     | 63        | 204    | 2     | 0     | 2         | 329    | 30     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 731   |
| 5:15 PM                 | 3                   | 0      | 4      | 0     | 22              | 1     | 89     | 0     | 63        | 230    | 5     | 0     | 2         | 291    | 27     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 737   |
| 5:30 PM                 | 3                   | 1      | 1      | 0     | 24              | 1     | 61     | 0     | 70        | 216    | 3     | 0     | 0         | 271    | 32     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 683   |
| 5:45 PM                 | 0                   | 0      | 1      | 0     | 18              | 2     | 59     | 0     | 56        | 195    | 0     | 0     | 0         | 225    | 24     | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 580   |
| <b>TOTAL VOLUMES :</b>  | 20                  | 5      | 21     | 0     | 177             | 9     | 511    | 0     | 459       | 1604   | 18    | 0     | 9         | 2080   | 241    | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 5154  |
| <b>APPROACH %'s :</b>   | 43.48%              | 10.87% | 45.65% | 0.00% | 25.39%          | 1.29% | 73.31% | 0.00% | 22.06%    | 77.08% | 0.86% | 0.00% | 0.39%     | 89.27% | 10.34% | 0.00% |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |       |
| <b>PEAK HR :</b>        | 04:45 PM - 05:45 PM |        |        |       |                 |       |        |       |           |        |       |       |           |        |        |       |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | TOTAL |
| <b>PEAK HR VOL :</b>    | 12                  | 2      | 10     | 0     | 93              | 3     | 267    | 0     | 257       | 839    | 11    | 0     | 5         | 1178   | 123    | 0     |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 2800  |
| <b>PEAK HR FACTOR :</b> | 0.600               | 0.500  | 0.625  | 0.000 | 0.930           | 0.750 | 0.750  | 0.000 | 0.918     | 0.912  | 0.550 | 0.000 | 0.625     | 0.895  | 0.904  | 0.000 |       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 0.950 |

# N Associated Rd & Birch St

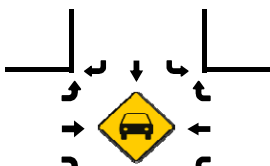
## Peak Hour Turning Movement Count

ID: 18-01231-007  
City: Brea

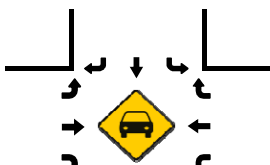
Day: Tuesday  
Date: 11/13/2018



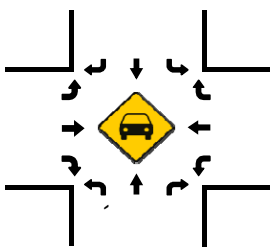
Total Vehicles (AM)



Total Vehicles (Noon)

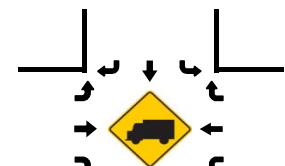


Total Vehicles (PM)

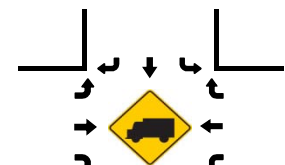


| BIRCH ST WESTBOUND |      | CONTROL |            | BIRCH ST EASTBOUND |      |     |
|--------------------|------|---------|------------|--------------------|------|-----|
| PM                 | NOON | AM      | Signalized | PM                 | NOON | AM  |
| 19                 | 0    | 12      | TEV        | 123                | 0    | 76  |
| 0                  | 0    | 0       | 2447       | 1178               | 0    | 676 |
| 0                  | 0    | 0       | 0          | 5                  | 0    | 8   |
| 0                  | 0    | 0       | 2800       | 0                  | 0    | 0   |
| 0                  | 0    | 0       | PHF        | 942                | 0    | 939 |
| 0                  | 0    | 0       | 0.88       | PM                 | NOON | AM  |
|                    |      |         |            |                    |      |     |

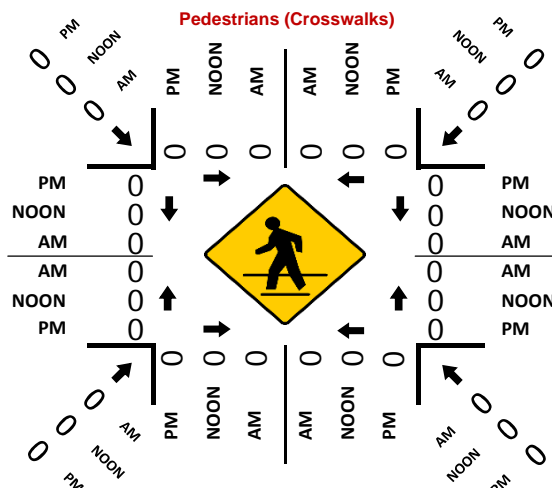
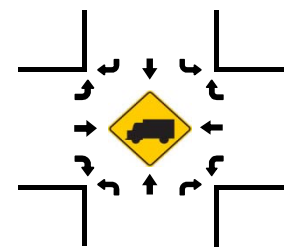
2axle (AM)



2axle (NOON)



2axle (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** S Kraemer Blvd & E Birch St  
**City:** Brea  
**Control:** Signalized

**Project ID:** 19-01101-009  
**Date:** 5/22/2019

### Total

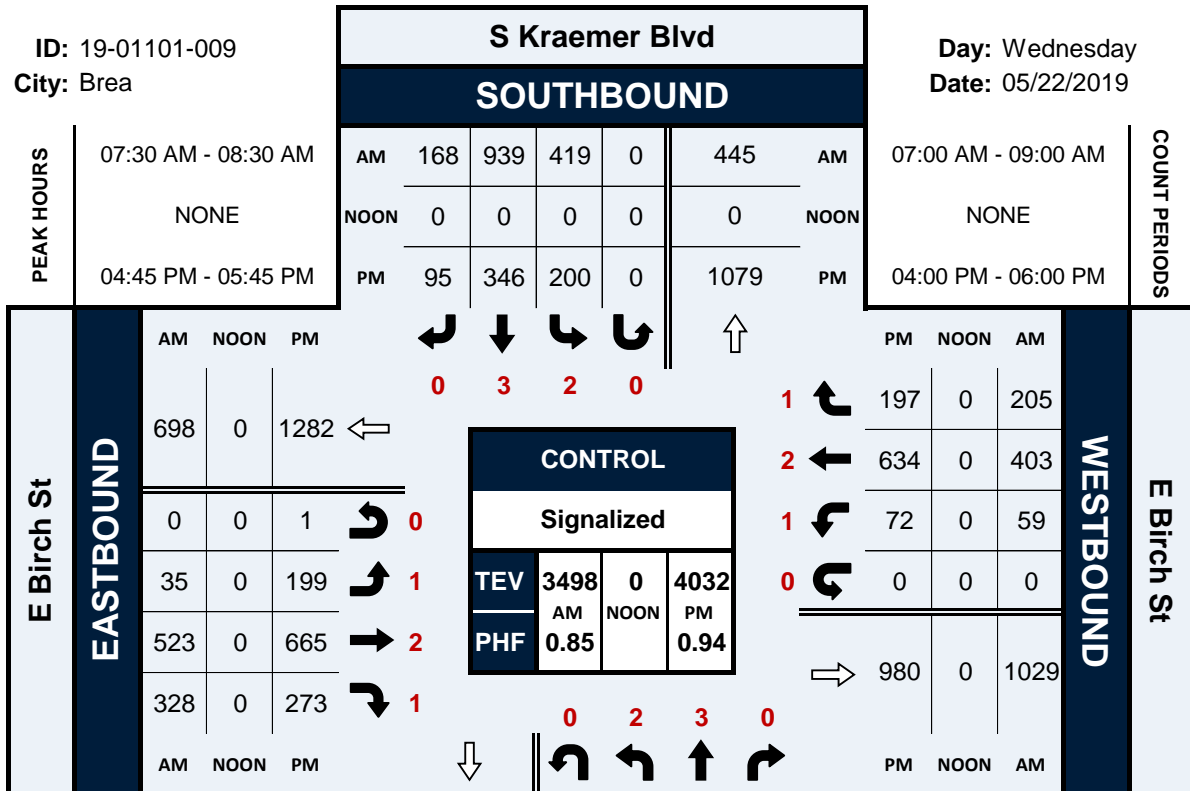
| NS/EW Streets:         |  | S Kraemer Blvd      |        |        |       | S Kraemer Blvd |        |        |       | E Birch St |        |        |       | E Birch St |        |        |       |       |
|------------------------|--|---------------------|--------|--------|-------|----------------|--------|--------|-------|------------|--------|--------|-------|------------|--------|--------|-------|-------|
| AM                     |  | NORTHBOUND          |        |        |       | SOUTHBOUND     |        |        |       | EASTBOUND  |        |        |       | WESTBOUND  |        |        |       |       |
|                        |  | NL                  | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL         | ET     | ER     | EU    | WL         | WT     | WR     | WU    | TOTAL |
| 7:00 AM                |  | 8                   | 25     | 10     | 0     | 66             | 238    | 30     | 0     | 3          | 121    | 52     | 0     | 5          | 44     | 22     | 0     | 624   |
| 7:15 AM                |  | 11                  | 37     | 17     | 0     | 82             | 226    | 30     | 0     | 6          | 109    | 68     | 0     | 16         | 68     | 20     | 0     | 690   |
| 7:30 AM                |  | 28                  | 34     | 20     | 0     | 118            | 252    | 41     | 0     | 6          | 152    | 87     | 0     | 9          | 74     | 31     | 0     | 852   |
| 7:45 AM                |  | 33                  | 59     | 31     | 0     | 138            | 264    | 44     | 0     | 6          | 143    | 82     | 0     | 28         | 122    | 80     | 0     | 1030  |
| 8:00 AM                |  | 35                  | 60     | 20     | 0     | 94             | 202    | 42     | 0     | 9          | 133    | 67     | 0     | 16         | 121    | 66     | 0     | 865   |
| 8:15 AM                |  | 31                  | 52     | 16     | 0     | 69             | 221    | 41     | 0     | 14         | 95     | 92     | 0     | 6          | 86     | 28     | 0     | 751   |
| 8:30 AM                |  | 17                  | 51     | 26     | 0     | 70             | 225    | 47     | 0     | 10         | 87     | 83     | 0     | 8          | 73     | 33     | 0     | 730   |
| 8:45 AM                |  | 19                  | 47     | 14     | 0     | 66             | 203    | 37     | 0     | 13         | 96     | 70     | 0     | 14         | 59     | 32     | 0     | 670   |
| <b>TOTAL VOLUMES:</b>  |  | NL                  | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL         | ET     | ER     | EU    | WL         | WT     | WR     | WU    | TOTAL |
| <b>APPROACH %'s:</b>   |  | 25.96%              | 52.07% | 21.97% | 0.00% | 24.70%         | 64.34% | 10.96% | 0.00% | 4.18%      | 58.35% | 37.47% | 0.00% | 9.61%      | 60.98% | 29.41% | 0.00% | 6212  |
| <b>PEAK HR:</b>        |  | 07:30 AM - 08:30 AM |        |        |       |                |        |        |       |            |        |        |       |            |        |        |       | TOTAL |
| <b>PEAK HR VOL:</b>    |  | 127                 | 205    | 87     | 0     | 419            | 939    | 168    | 0     | 35         | 523    | 328    | 0     | 59         | 403    | 205    | 0     | 3498  |
| <b>PEAK HR FACTOR:</b> |  | 0.907               | 0.854  | 0.702  | 0.000 | 0.759          | 0.889  | 0.955  | 0.000 | 0.625      | 0.860  | 0.891  | 0.000 | 0.527      | 0.826  | 0.641  | 0.000 | 0.849 |
|                        |  | 0.852               |        |        |       | 0.855          |        |        |       | 0.904      |        |        |       | 0.725      |        |        |       |       |
| PM                     |  | NORTHBOUND          |        |        |       | SOUTHBOUND     |        |        |       | EASTBOUND  |        |        |       | WESTBOUND  |        |        |       |       |
|                        |  | NL                  | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL         | ET     | ER     | EU    | WL         | WT     | WR     | WU    | TOTAL |
| 4:00 PM                |  | 77                  | 143    | 19     | 0     | 45             | 113    | 20     | 0     | 34         | 139    | 52     | 0     | 15         | 197    | 63     | 0     | 917   |
| 4:15 PM                |  | 75                  | 141    | 19     | 0     | 58             | 124    | 20     | 0     | 32         | 108    | 58     | 0     | 13         | 135    | 39     | 1     | 823   |
| 4:30 PM                |  | 144                 | 172    | 37     | 0     | 56             | 90     | 15     | 0     | 34         | 117    | 62     | 0     | 16         | 196    | 58     | 0     | 997   |
| 4:45 PM                |  | 109                 | 165    | 27     | 0     | 43             | 69     | 29     | 0     | 41         | 167    | 59     | 1     | 13         | 138    | 62     | 0     | 923   |
| 5:00 PM                |  | 150                 | 145    | 29     | 0     | 50             | 61     | 12     | 0     | 53         | 164    | 60     | 0     | 24         | 198    | 57     | 0     | 1003  |
| 5:15 PM                |  | 139                 | 189    | 26     | 0     | 58             | 102    | 25     | 0     | 60         | 173    | 87     | 0     | 23         | 148    | 46     | 0     | 1076  |
| 5:30 PM                |  | 154                 | 184    | 33     | 0     | 49             | 114    | 29     | 0     | 45         | 161    | 67     | 0     | 12         | 150    | 32     | 0     | 1030  |
| 5:45 PM                |  | 122                 | 182    | 33     | 0     | 53             | 76     | 24     | 0     | 32         | 146    | 55     | 0     | 11         | 111    | 38     | 0     | 883   |
| <b>TOTAL VOLUMES:</b>  |  | NL                  | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL         | ET     | ER     | EU    | WL         | WT     | WR     | WU    | TOTAL |
| <b>APPROACH %'s:</b>   |  | 38.58%              | 52.55% | 8.87%  | 0.00% | 30.86%         | 56.10% | 13.03% | 0.00% | 16.49%     | 58.55% | 24.91% | 0.05% | 7.07%      | 70.88% | 21.99% | 0.06% | 7652  |
| <b>PEAK HR:</b>        |  | 04:45 PM - 05:45 PM |        |        |       |                |        |        |       |            |        |        |       |            |        |        |       | TOTAL |
| <b>PEAK HR VOL:</b>    |  | 552                 | 683    | 115    | 0     | 200            | 346    | 95     | 0     | 199        | 665    | 273    | 1     | 72         | 634    | 197    | 0     | 4032  |
| <b>PEAK HR FACTOR:</b> |  | 0.896               | 0.903  | 0.871  | 0.000 | 0.862          | 0.759  | 0.819  | 0.000 | 0.829      | 0.961  | 0.784  | 0.250 | 0.750      | 0.801  | 0.794  | 0.000 | 0.937 |
|                        |  | 0.910               |        |        |       | 0.835          |        |        |       | 0.889      |        |        |       | 0.809      |        |        |       |       |

# S Kraemer Blvd & E Birch St

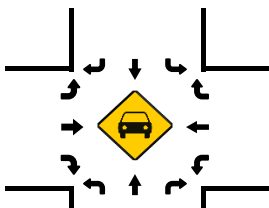
## Peak Hour Turning Movement Count

ID: 19-01101-009  
City: Brea

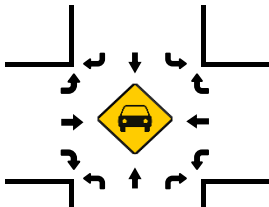
Day: Wednesday  
Date: 05/22/2019



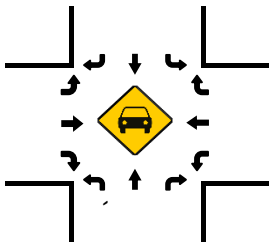
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)

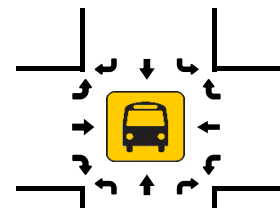


|      |      |   |     |     |     |      |
|------|------|---|-----|-----|-----|------|
| PM   | 691  | 0 | 552 | 683 | 115 | PM   |
| NOON | 0    | 0 | 0   | 0   | 0   | NOON |
| AM   | 1326 | 0 | 127 | 205 | 87  | AM   |

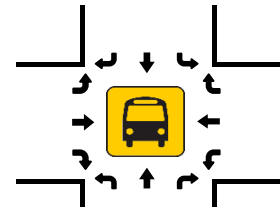
### NORTHBOUND

### S Kraemer Blvd

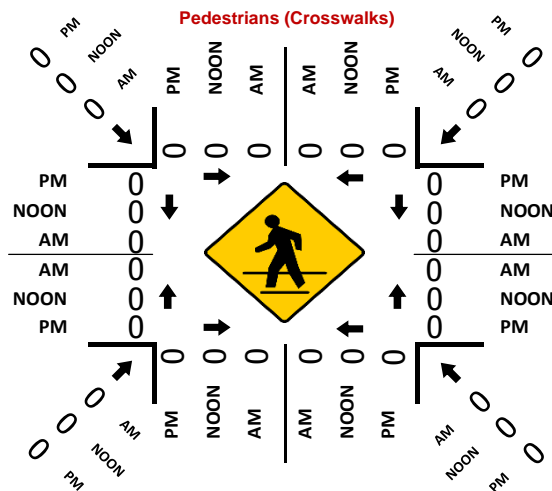
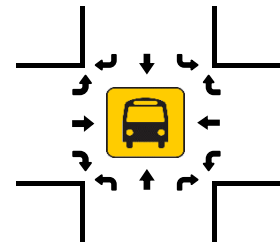
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



# National Data & Surveying Services Intersection Turning Movement Count

Location: Valencia Ave & Birch St/Rose Dr  
 City: Brea  
 Control: Signalized

Project ID: 18-01058-002  
 Date: 3/27/2018

## Total

| NS/EW Streets:          | Valencia Ave        |         |         |         | Valencia Ave |         |         |         | Birch St/Rose Dr |         |         |         | Birch St/Rose Dr |         |         |         | TOTAL |
|-------------------------|---------------------|---------|---------|---------|--------------|---------|---------|---------|------------------|---------|---------|---------|------------------|---------|---------|---------|-------|
|                         | NORTHBOUND          |         |         |         | SOUTHBOUND   |         |         |         | EASTBOUND        |         |         |         | WESTBOUND        |         |         |         |       |
| AM                      | 1<br>NL             | 2<br>NT | 0<br>NR | 0<br>NU | 1<br>SL      | 2<br>ST | 0<br>SR | 0<br>SU | 2<br>EL          | 2<br>ET | 0<br>ER | 0<br>EU | 1<br>WL          | 2<br>WT | 1<br>WR | 0<br>WU |       |
| 7:00 AM                 | 11                  | 29      | 2       | 0       | 196          | 185     | 25      | 0       | 6                | 86      | 20      | 0       | 4                | 55      | 63      | 0       | 682   |
| 7:15 AM                 | 18                  | 37      | 3       | 0       | 194          | 187     | 22      | 0       | 8                | 99      | 16      | 0       | 5                | 78      | 66      | 0       | 733   |
| 7:30 AM                 | 33                  | 43      | 5       | 0       | 178          | 204     | 79      | 0       | 14               | 110     | 25      | 0       | 1                | 85      | 66      | 0       | 843   |
| 7:45 AM                 | 57                  | 48      | 1       | 0       | 152          | 178     | 115     | 0       | 14               | 91      | 50      | 0       | 3                | 99      | 79      | 0       | 887   |
| 8:00 AM                 | 16                  | 62      | 4       | 2       | 173          | 164     | 20      | 0       | 22               | 106     | 35      | 0       | 3                | 68      | 85      | 0       | 760   |
| 8:15 AM                 | 22                  | 55      | 2       | 1       | 158          | 153     | 17      | 0       | 7                | 60      | 20      | 0       | 3                | 91      | 83      | 0       | 672   |
| 8:30 AM                 | 19                  | 48      | 3       | 0       | 164          | 156     | 13      | 0       | 2                | 67      | 12      | 0       | 4                | 55      | 80      | 0       | 623   |
| 8:45 AM                 | 15                  | 56      | 3       | 2       | 148          | 135     | 19      | 2       | 8                | 67      | 23      | 0       | 2                | 74      | 65      | 0       | 619   |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT      | NR      | NU      | SL           | ST      | SR      | SU      | EL               | ET      | ER      | EU      | WL               | WT      | WR      | WU      | TOTAL |
| <b>APPROACH %'s :</b>   | 191                 | 378     | 23      | 5       | 1363         | 1362    | 310     | 2       | 81               | 686     | 201     | 0       | 25               | 605     | 587     | 0       | 5819  |
|                         | 31.99%              | 63.32%  | 3.85%   | 0.84%   | 44.88%       | 44.85%  | 10.21%  | 0.07%   | 8.37%            | 70.87%  | 20.76%  | 0.00%   | 2.05%            | 49.71%  | 48.23%  | 0.00%   |       |
| <b>PEAK HR :</b>        | 07:15 AM - 08:15 AM |         |         |         |              |         |         |         |                  |         |         |         |                  |         |         |         | TOTAL |
| <b>PEAK HR VOL :</b>    | 124                 | 190     | 13      | 2       | 697          | 733     | 236     | 0       | 58               | 406     | 126     | 0       | 12               | 330     | 296     | 0       | 3223  |
| <b>PEAK HR FACTOR :</b> | 0.544               | 0.766   | 0.650   | 0.250   | 0.898        | 0.898   | 0.513   | 0.000   | 0.659            | 0.923   | 0.630   | 0.000   | 0.600            | 0.833   | 0.871   | 0.000   | 0.908 |
|                         |                     |         | 0.776   |         |              | 0.903   |         |         |                  | 0.905   |         |         |                  | 0.881   |         |         |       |
| PM                      | 1<br>NL             | 2<br>NT | 0<br>NR | 0<br>NU | 1<br>SL      | 2<br>ST | 0<br>SR | 0<br>SU | 2<br>EL          | 2<br>ET | 0<br>ER | 0<br>EU | 1<br>WL          | 2<br>WT | 1<br>WR | 0<br>WU | TOTAL |
| 4:00 PM                 | 23                  | 129     | 2       | 0       | 98           | 57      | 5       | 0       | 35               | 103     | 21      | 0       | 3                | 77      | 179     | 0       | 732   |
| 4:15 PM                 | 38                  | 124     | 1       | 0       | 100          | 54      | 5       | 0       | 34               | 142     | 20      | 0       | 1                | 91      | 157     | 0       | 767   |
| 4:30 PM                 | 48                  | 125     | 4       | 0       | 86           | 46      | 8       | 0       | 44               | 131     | 32      | 0       | 3                | 103     | 151     | 0       | 781   |
| 4:45 PM                 | 40                  | 93      | 2       | 2       | 110          | 39      | 12      | 0       | 40               | 125     | 27      | 0       | 4                | 98      | 199     | 0       | 791   |
| 5:00 PM                 | 46                  | 159     | 2       | 0       | 99           | 66      | 10      | 0       | 43               | 148     | 32      | 0       | 0                | 85      | 178     | 0       | 868   |
| 5:15 PM                 | 43                  | 118     | 6       | 2       | 107          | 48      | 5       | 2       | 36               | 161     | 35      | 0       | 4                | 131     | 158     | 0       | 856   |
| 5:30 PM                 | 37                  | 102     | 9       | 0       | 91           | 43      | 14      | 0       | 37               | 129     | 25      | 0       | 6                | 95      | 141     | 0       | 729   |
| 5:45 PM                 | 32                  | 76      | 2       | 1       | 94           | 59      | 10      | 0       | 24               | 119     | 28      | 0       | 1                | 90      | 140     | 0       | 676   |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT      | NR      | NU      | SL           | ST      | SR      | SU      | EL               | ET      | ER      | EU      | WL               | WT      | WR      | WU      | TOTAL |
| <b>APPROACH %'s :</b>   | 307                 | 926     | 28      | 5       | 785          | 412     | 69      | 2       | 293              | 1058    | 220     | 0       | 22               | 770     | 1303    | 0       | 6200  |
|                         | 24.25%              | 73.14%  | 2.21%   | 0.39%   | 61.91%       | 32.49%  | 5.44%   | 0.16%   | 18.65%           | 67.35%  | 14.00%  | 0.00%   | 1.05%            | 36.75%  | 62.20%  | 0.00%   |       |
| <b>PEAK HR :</b>        | 04:30 PM - 05:30 PM |         |         |         |              |         |         |         |                  |         |         |         |                  |         |         |         | TOTAL |
| <b>PEAK HR VOL :</b>    | 177                 | 495     | 14      | 4       | 402          | 199     | 35      | 2       | 163              | 565     | 126     | 0       | 11               | 417     | 686     | 0       | 3296  |
| <b>PEAK HR FACTOR :</b> | 0.922               | 0.778   | 0.583   | 0.500   | 0.914        | 0.754   | 0.729   | 0.250   | 0.926            | 0.877   | 0.900   | 0.000   | 0.688            | 0.796   | 0.862   | 0.000   | 0.949 |
|                         |                     |         | 0.833   |         |              | 0.911   |         |         |                  | 0.920   |         |         |                  | 0.925   |         |         |       |

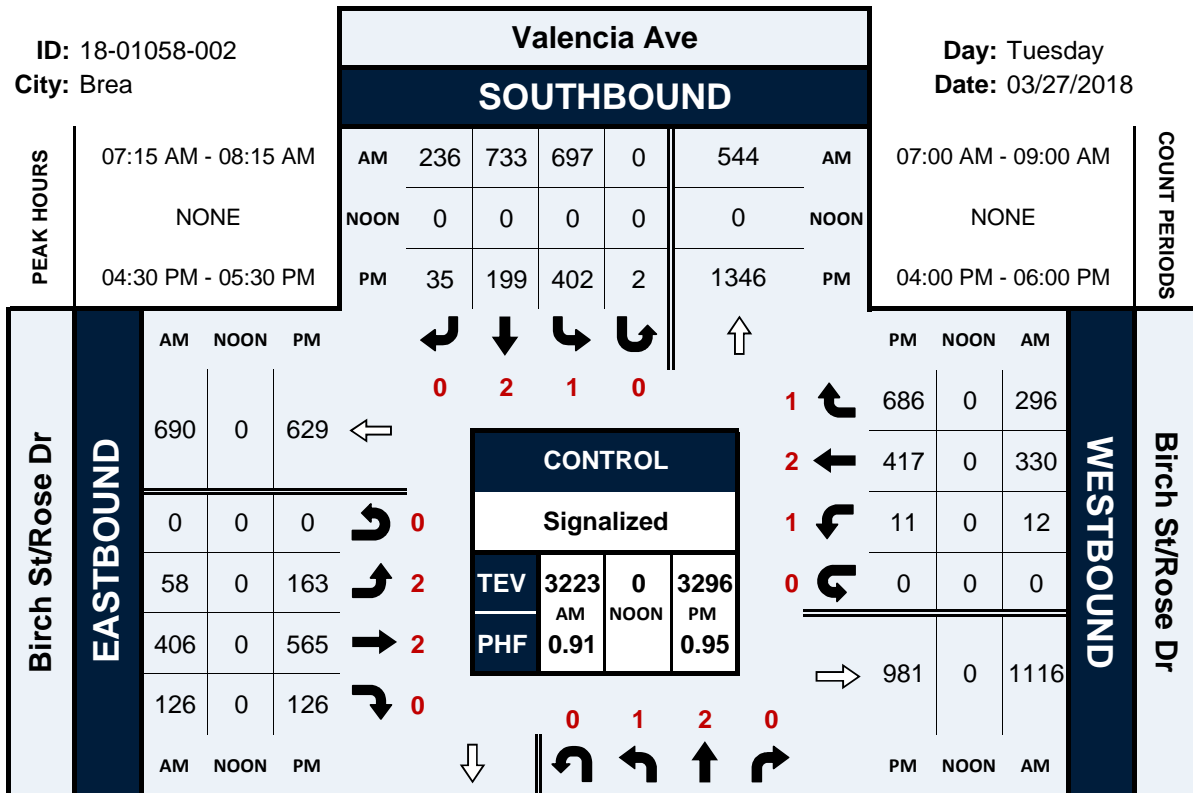


# Valencia Ave & Birch St/Rose Dr

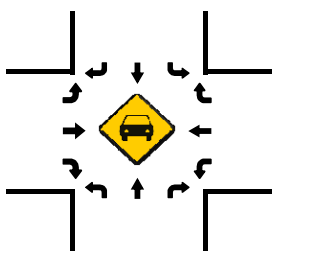
## Peak Hour Turning Movement Count

ID: 18-01058-002  
City: Brea

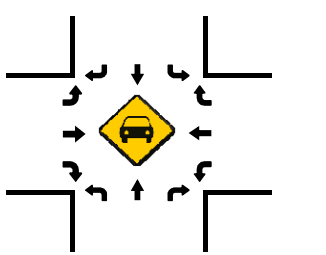
Day: Tuesday  
Date: 03/27/2018



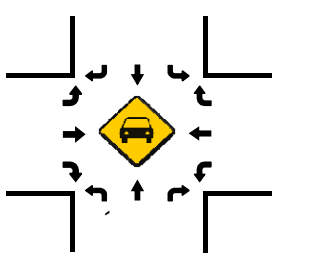
Total Vehicles (AM)



Total Vehicles (NOON)



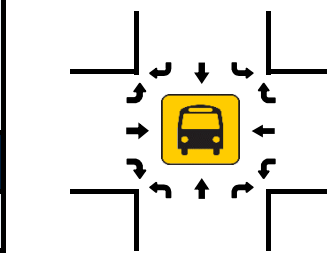
Total Vehicles (PM)



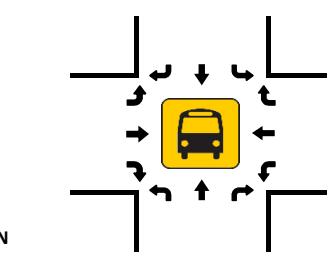
|      |     |   |     |     |    |      |
|------|-----|---|-----|-----|----|------|
| PM   | 340 | 4 | 177 | 495 | 14 | PM   |
| NOON | 0   | 0 | 0   | 0   | 0  | NOON |
| AM   | 873 | 2 | 124 | 190 | 13 | AM   |

### Valencia Ave NORTHBOUND

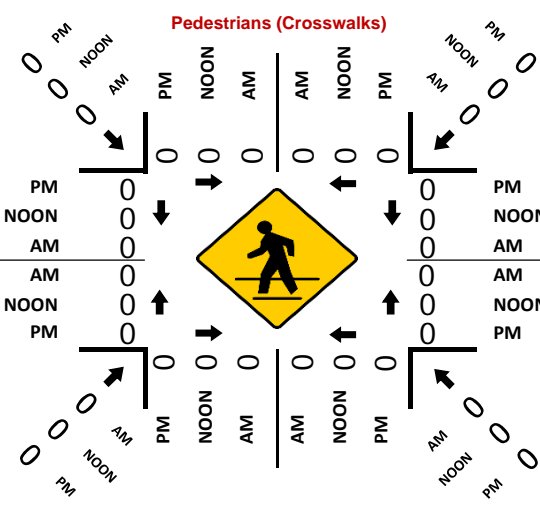
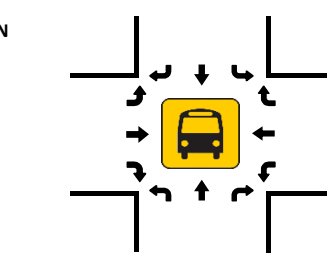
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Rose Dr & Vesuvius Dr  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-008  
 Date: 11/13/2018

### Total

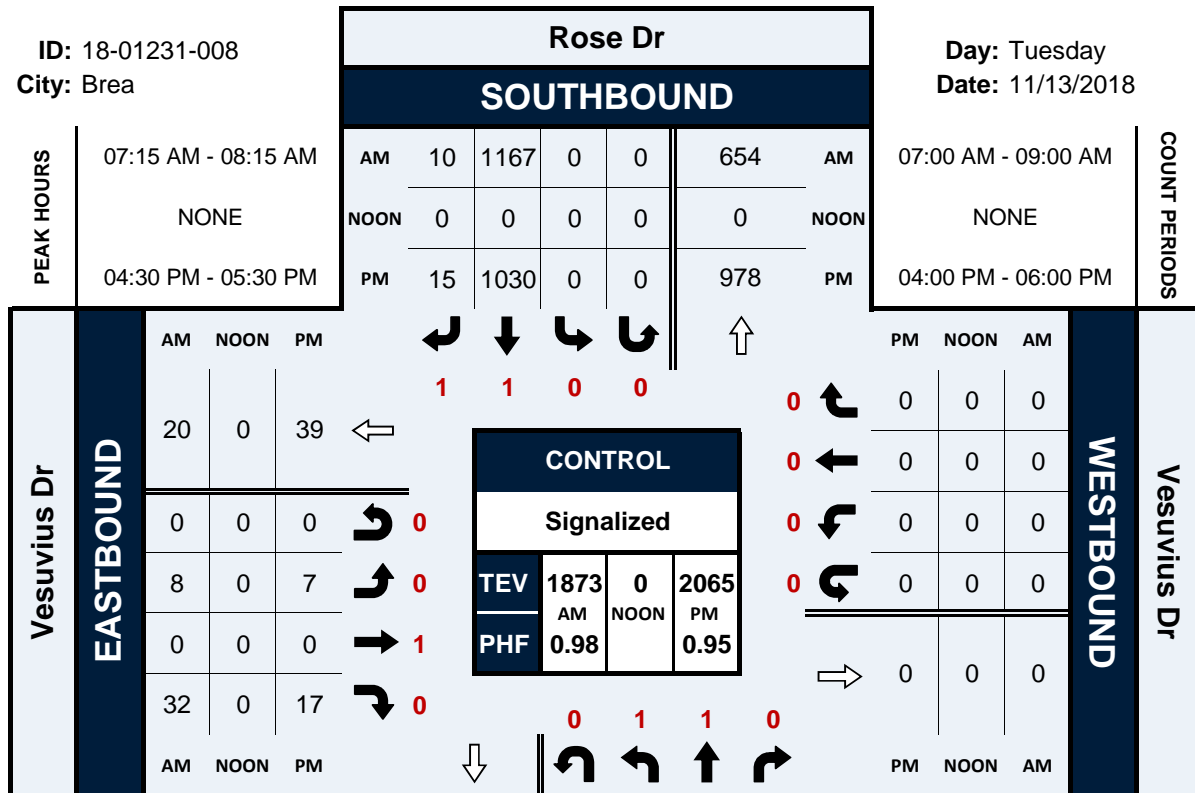
| NS/EW Streets:          | Rose Dr             |        |       |       | Rose Dr    |        |       |       | Vesuvius Dr |       |        |       | Vesuvius Dr |       |       |       | TOTAL        |   |   |   |       |
|-------------------------|---------------------|--------|-------|-------|------------|--------|-------|-------|-------------|-------|--------|-------|-------------|-------|-------|-------|--------------|---|---|---|-------|
|                         | NORTHBOUND          |        |       |       | SOUTHBOUND |        |       |       | EASTBOUND   |       |        |       | WESTBOUND   |       |       |       |              |   |   |   |       |
| AM                      | 1                   | 1      | 0     | 0     | 0          | 1      | 1     | 0     | 0           | 1     | 0      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 |       |
|                         | NL                  | NT     | NR    | NU    | SL         | ST     | SR    | SU    | EL          | ET    | ER     | EU    | WL          | WT    | WR    | WU    |              |   |   |   |       |
| 7:00 AM                 | 3                   | 131    | 0     | 0     | 1          | 293    | 1     | 0     | 3           | 0     | 7      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 439   |
| 7:15 AM                 | 0                   | 141    | 0     | 0     | 0          | 313    | 1     | 0     | 2           | 0     | 5      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 462   |
| 7:30 AM                 | 4                   | 154    | 0     | 0     | 0          | 287    | 2     | 0     | 2           | 0     | 16     | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 465   |
| 7:45 AM                 | 5                   | 160    | 0     | 0     | 0          | 297    | 4     | 0     | 4           | 0     | 6      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 476   |
| 8:00 AM                 | 1                   | 191    | 0     | 0     | 0          | 270    | 3     | 0     | 0           | 0     | 5      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 470   |
| 8:15 AM                 | 2                   | 170    | 0     | 0     | 0          | 273    | 1     | 0     | 1           | 0     | 5      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 452   |
| 8:30 AM                 | 3                   | 151    | 1     | 0     | 0          | 225    | 1     | 0     | 1           | 0     | 5      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 387   |
| 8:45 AM                 | 0                   | 158    | 1     | 0     | 0          | 240    | 0     | 0     | 2           | 0     | 6      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 407   |
| <b>TOTAL VOLUMES :</b>  | 18                  | 1256   | 2     | 0     | 1          | 2198   | 13    | 0     | 15          | 0     | 55     | 0     | 0           | 0     | 0     | 0     |              |   |   |   | 3558  |
| <b>APPROACH %'s :</b>   | 1.41%               | 98.43% | 0.16% | 0.00% | 0.05%      | 99.37% | 0.59% | 0.00% | 21.43%      | 0.00% | 78.57% | 0.00% |             |       |       |       |              |   |   |   |       |
| <b>PEAK HR :</b>        | 07:15 AM - 08:15 AM |        |       |       |            |        |       |       |             |       |        |       |             |       |       |       | <b>TOTAL</b> |   |   |   |       |
| <b>PEAK HR VOL :</b>    | 10                  | 646    | 0     | 0     | 0          | 1167   | 10    | 0     | 8           | 0     | 32     | 0     | 0           | 0     | 0     | 0     |              |   |   |   | 1873  |
| <b>PEAK HR FACTOR :</b> | 0.500               | 0.846  | 0.000 | 0.000 | 0.000      | 0.932  | 0.625 | 0.000 | 0.500       | 0.000 | 0.500  | 0.000 | 0.000       | 0.000 | 0.000 | 0.000 |              |   |   |   | 0.984 |
|                         |                     |        | 0.854 |       |            | 0.937  |       |       |             | 0.556 |        |       |             |       |       |       |              |   |   |   |       |
| PM                      | 1                   | 1      | 0     | 0     | 0          | 1      | 1     | 0     | 0           | 1     | 0      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 |       |
|                         | NL                  | NT     | NR    | NU    | SL         | ST     | SR    | SU    | EL          | ET    | ER     | EU    | WL          | WT    | WR    | WU    |              |   |   |   |       |
| 4:00 PM                 | 8                   | 217    | 0     | 0     | 0          | 227    | 3     | 0     | 3           | 0     | 3      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 461   |
| 4:15 PM                 | 9                   | 231    | 0     | 0     | 0          | 223    | 3     | 0     | 2           | 0     | 4      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 472   |
| 4:30 PM                 | 4                   | 241    | 0     | 0     | 0          | 265    | 6     | 0     | 0           | 0     | 4      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 520   |
| 4:45 PM                 | 5                   | 250    | 0     | 0     | 0          | 278    | 3     | 0     | 3           | 0     | 3      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 542   |
| 5:00 PM                 | 8                   | 243    | 0     | 0     | 0          | 256    | 4     | 0     | 1           | 0     | 7      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 519   |
| 5:15 PM                 | 7                   | 237    | 0     | 1     | 0          | 231    | 2     | 0     | 3           | 0     | 3      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 484   |
| 5:30 PM                 | 6                   | 230    | 1     | 0     | 0          | 256    | 3     | 0     | 3           | 0     | 9      | 0     | 0           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 508   |
| 5:45 PM                 | 10                  | 251    | 0     | 0     | 0          | 217    | 1     | 0     | 0           | 0     | 6      | 0     | 1           | 0     | 0     | 0     | 0            | 0 | 0 | 0 | 486   |
| <b>TOTAL VOLUMES :</b>  | 57                  | 1900   | 1     | 1     | 0          | 1953   | 25    | 0     | 15          | 0     | 39     | 0     | 1           | 0     | 0     | 0     |              |   |   |   | 3992  |
| <b>APPROACH %'s :</b>   | 2.91%               | 96.99% | 0.05% | 0.05% | 0.00%      | 98.74% | 1.26% | 0.00% | 27.78%      | 0.00% | 72.22% | 0.00% | 100.00%     | 0.00% | 0.00% | 0.00% |              |   |   |   |       |
| <b>PEAK HR :</b>        | 04:30 PM - 05:30 PM |        |       |       |            |        |       |       |             |       |        |       |             |       |       |       | <b>TOTAL</b> |   |   |   |       |
| <b>PEAK HR VOL :</b>    | 24                  | 971    | 0     | 1     | 0          | 1030   | 15    | 0     | 7           | 0     | 17     | 0     | 0           | 0     | 0     | 0     |              |   |   |   | 2065  |
| <b>PEAK HR FACTOR :</b> | 0.750               | 0.971  | 0.000 | 0.250 | 0.000      | 0.926  | 0.625 | 0.000 | 0.583       | 0.000 | 0.607  | 0.000 | 0.000       | 0.000 | 0.000 | 0.000 |              |   |   |   | 0.952 |
|                         |                     |        | 0.976 |       |            | 0.930  |       |       |             | 0.750 |        |       |             |       |       |       |              |   |   |   |       |

# Rose Dr & Vesuvius Dr

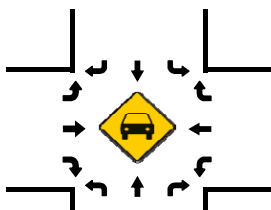
## Peak Hour Turning Movement Count

ID: 18-01231-008  
City: Brea

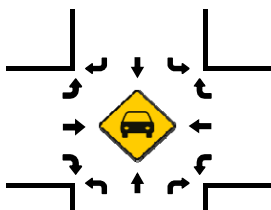
Day: Tuesday  
Date: 11/13/2018



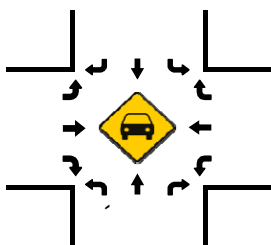
Total Vehicles (AM)



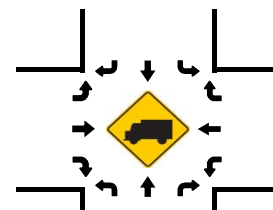
Total Vehicles (Noon)



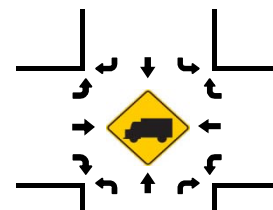
Total Vehicles (PM)



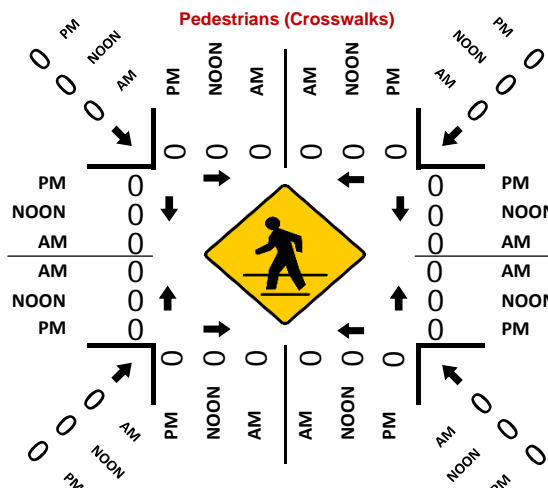
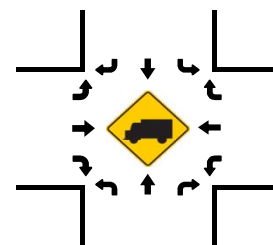
2axle (AM)



2axle (NOON)



2axle (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** SR-57 SB Ramps & Imperial Hwy  
**City:** Brea  
**Control:** Signalized

**Project ID:** 19-01101-015  
**Date:** 5/22/2019

### Total

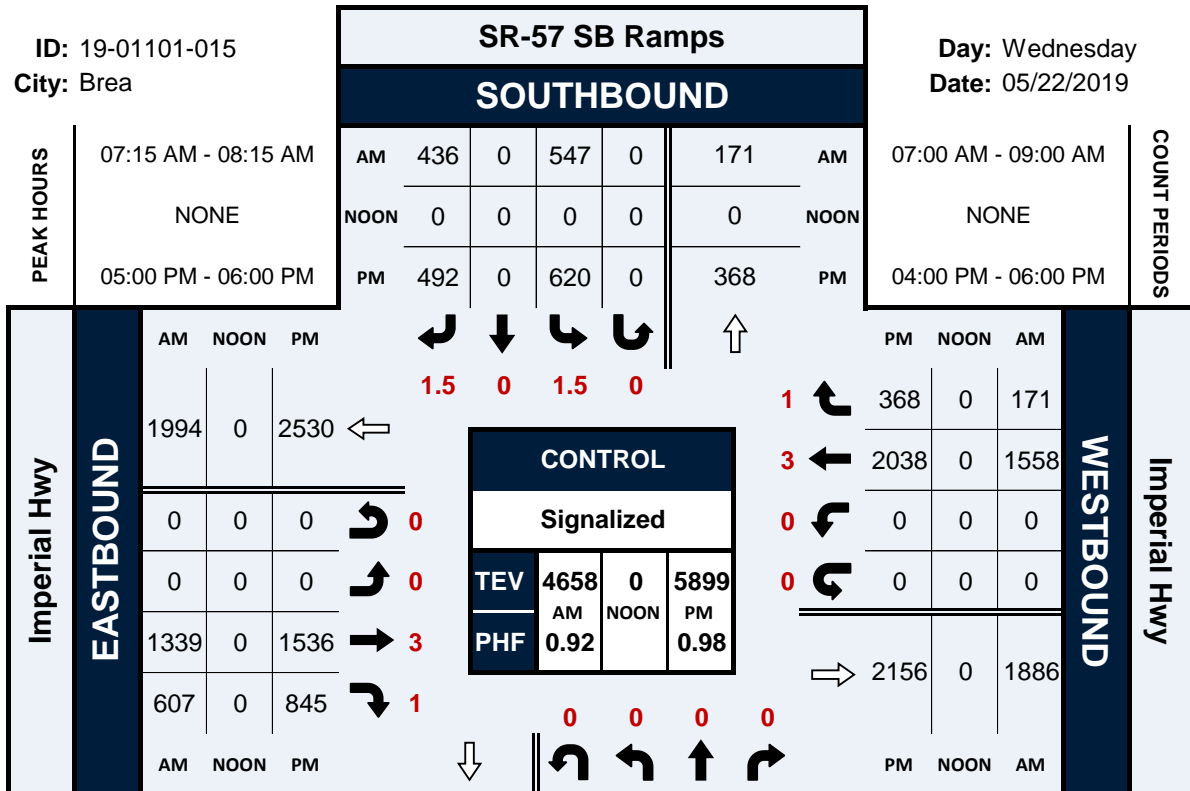
| NS/EW Streets:         | SR-57 SB Ramps      |       |       |       | SR-57 SB Ramps |       |        |       | Imperial Hwy |        |        |       | Imperial Hwy |        |        |       | TOTAL |
|------------------------|---------------------|-------|-------|-------|----------------|-------|--------|-------|--------------|--------|--------|-------|--------------|--------|--------|-------|-------|
|                        | NORTHBOUND          |       |       |       | SOUTHBOUND     |       |        |       | EASTBOUND    |        |        |       | WESTBOUND    |        |        |       |       |
| AM                     | NL                  | NT    | NR    | NU    | SL             | ST    | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    |       |
| 7:00 AM                | 0                   | 0     | 0     | 0     | 145            | 0     | 89     | 0     | 0            | 316    | 142    | 0     | 0            | 305    | 30     | 0     | 1027  |
| 7:15 AM                | 0                   | 0     | 0     | 0     | 145            | 0     | 107    | 0     | 0            | 343    | 138    | 0     | 0            | 363    | 35     | 0     | 1131  |
| 7:30 AM                | 0                   | 0     | 0     | 0     | 164            | 0     | 115    | 0     | 0            | 367    | 158    | 0     | 0            | 417    | 43     | 0     | 1264  |
| 7:45 AM                | 0                   | 0     | 0     | 0     | 123            | 0     | 128    | 0     | 0            | 312    | 155    | 0     | 0            | 391    | 35     | 0     | 1144  |
| 8:00 AM                | 0                   | 0     | 0     | 0     | 115            | 0     | 86     | 0     | 0            | 317    | 156    | 0     | 0            | 387    | 58     | 0     | 1119  |
| 8:15 AM                | 0                   | 0     | 0     | 0     | 102            | 0     | 83     | 0     | 0            | 328    | 162    | 0     | 0            | 328    | 47     | 0     | 1050  |
| 8:30 AM                | 0                   | 0     | 0     | 0     | 89             | 0     | 80     | 0     | 0            | 326    | 130    | 0     | 0            | 332    | 64     | 0     | 1021  |
| 8:45 AM                | 0                   | 0     | 0     | 0     | 102            | 0     | 99     | 0     | 0            | 284    | 105    | 0     | 0            | 394    | 61     | 0     | 1045  |
| <b>TOTAL VOLUMES:</b>  | NL                  | NT    | NR    | NU    | SL             | ST    | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    | TOTAL |
| <b>APPROACH %'s:</b>   | 0                   | 0     | 0     | 0     | 985            | 0     | 787    | 0     | 0            | 2593   | 1146   | 0     | 0            | 2917   | 373    | 0     | 8801  |
|                        |                     |       |       |       | 55.59%         | 0.00% | 44.41% | 0.00% | 0.00%        | 69.35% | 30.65% | 0.00% | 0.00%        | 88.66% | 11.34% | 0.00% |       |
| <b>PEAK HR:</b>        | 07:15 AM - 08:15 AM |       |       |       |                |       |        |       |              |        |        |       |              |        |        |       | TOTAL |
| <b>PEAK HR VOL:</b>    | 0                   | 0     | 0     | 0     | 547            | 0     | 436    | 0     | 0            | 1339   | 607    | 0     | 0            | 1558   | 171    | 0     | 4658  |
| <b>PEAK HR FACTOR:</b> | 0.000               | 0.000 | 0.000 | 0.000 | 0.834          | 0.000 | 0.852  | 0.000 | 0.000        | 0.912  | 0.960  | 0.000 | 0.000        | 0.934  | 0.737  | 0.000 | 0.921 |
|                        |                     |       |       |       |                | 0.881 |        |       |              | 0.927  |        |       |              | 0.940  |        |       |       |
| PM                     | NL                  | NT    | NR    | NU    | SL             | ST    | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    | TOTAL |
| 4:00 PM                | 0                   | 0     | 0     | 0     | 131            | 0     | 102    | 0     | 0            | 340    | 161    | 0     | 0            | 527    | 111    | 0     | 1372  |
| 4:15 PM                | 0                   | 0     | 0     | 0     | 142            | 0     | 108    | 0     | 0            | 385    | 134    | 0     | 0            | 459    | 104    | 0     | 1332  |
| 4:30 PM                | 0                   | 0     | 0     | 0     | 102            | 0     | 97     | 0     | 0            | 343    | 169    | 0     | 0            | 502    | 101    | 0     | 1314  |
| 4:45 PM                | 0                   | 0     | 0     | 0     | 129            | 0     | 117    | 0     | 0            | 327    | 175    | 0     | 0            | 522    | 137    | 0     | 1407  |
| 5:00 PM                | 0                   | 0     | 0     | 0     | 150            | 0     | 135    | 0     | 0            | 345    | 248    | 0     | 0            | 517    | 100    | 0     | 1495  |
| 5:15 PM                | 0                   | 0     | 0     | 0     | 169            | 0     | 127    | 0     | 0            | 411    | 213    | 0     | 0            | 496    | 86     | 0     | 1502  |
| 5:30 PM                | 0                   | 0     | 0     | 0     | 161            | 0     | 120    | 0     | 0            | 396    | 194    | 0     | 0            | 507    | 82     | 0     | 1460  |
| 5:45 PM                | 0                   | 0     | 0     | 0     | 140            | 0     | 110    | 0     | 0            | 384    | 190    | 0     | 0            | 518    | 100    | 0     | 1442  |
| <b>TOTAL VOLUMES:</b>  | NL                  | NT    | NR    | NU    | SL             | ST    | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    | TOTAL |
| <b>APPROACH %'s:</b>   | 0                   | 0     | 0     | 0     | 1124           | 0     | 916    | 0     | 0            | 2931   | 1484   | 0     | 0            | 4048   | 821    | 0     | 11324 |
|                        |                     |       |       |       | 55.10%         | 0.00% | 44.90% | 0.00% | 0.00%        | 66.39% | 33.61% | 0.00% | 0.00%        | 83.14% | 16.86% | 0.00% |       |
| <b>PEAK HR:</b>        | 05:00 PM - 06:00 PM |       |       |       |                |       |        |       |              |        |        |       |              |        |        |       | TOTAL |
| <b>PEAK HR VOL:</b>    | 0                   | 0     | 0     | 0     | 620            | 0     | 492    | 0     | 0            | 1536   | 845    | 0     | 0            | 2038   | 368    | 0     | 5899  |
| <b>PEAK HR FACTOR:</b> | 0.000               | 0.000 | 0.000 | 0.000 | 0.917          | 0.000 | 0.911  | 0.000 | 0.000        | 0.934  | 0.852  | 0.000 | 0.000        | 0.984  | 0.920  | 0.000 | 0.982 |
|                        |                     |       |       |       |                | 0.939 |        |       |              | 0.954  |        |       |              | 0.973  |        |       |       |

# SR-57 SB Ramps & Imperial Hwy

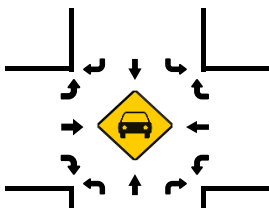
## Peak Hour Turning Movement Count

ID: 19-01101-015  
City: Brea

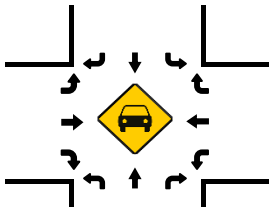
Day: Wednesday  
Date: 05/22/2019



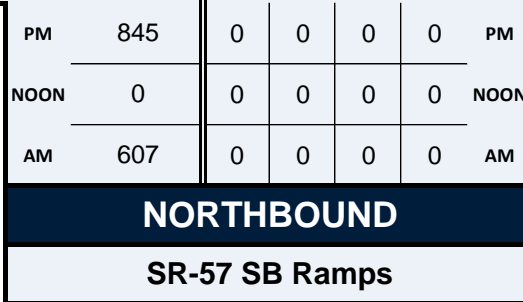
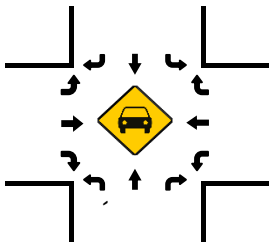
Total Vehicles (AM)



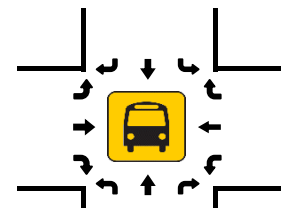
Total Vehicles (NOON)



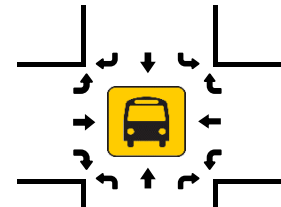
Total Vehicles (PM)



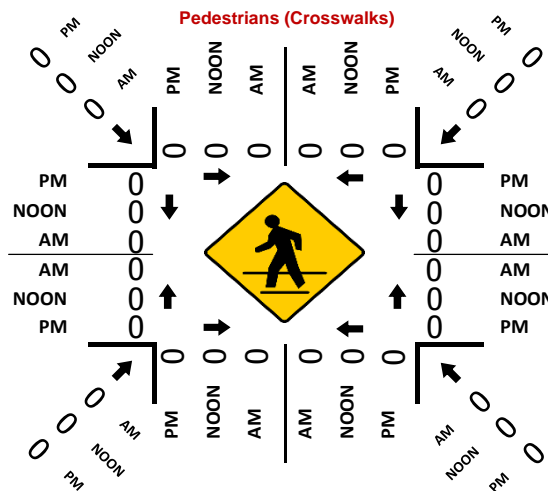
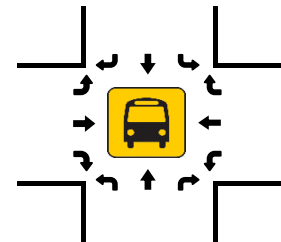
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: SR-57 NB Ramps & Imperial Hwy  
 City: Brea  
 Control: Signalized

Project ID: 19-01101-016  
 Date: 5/22/2019

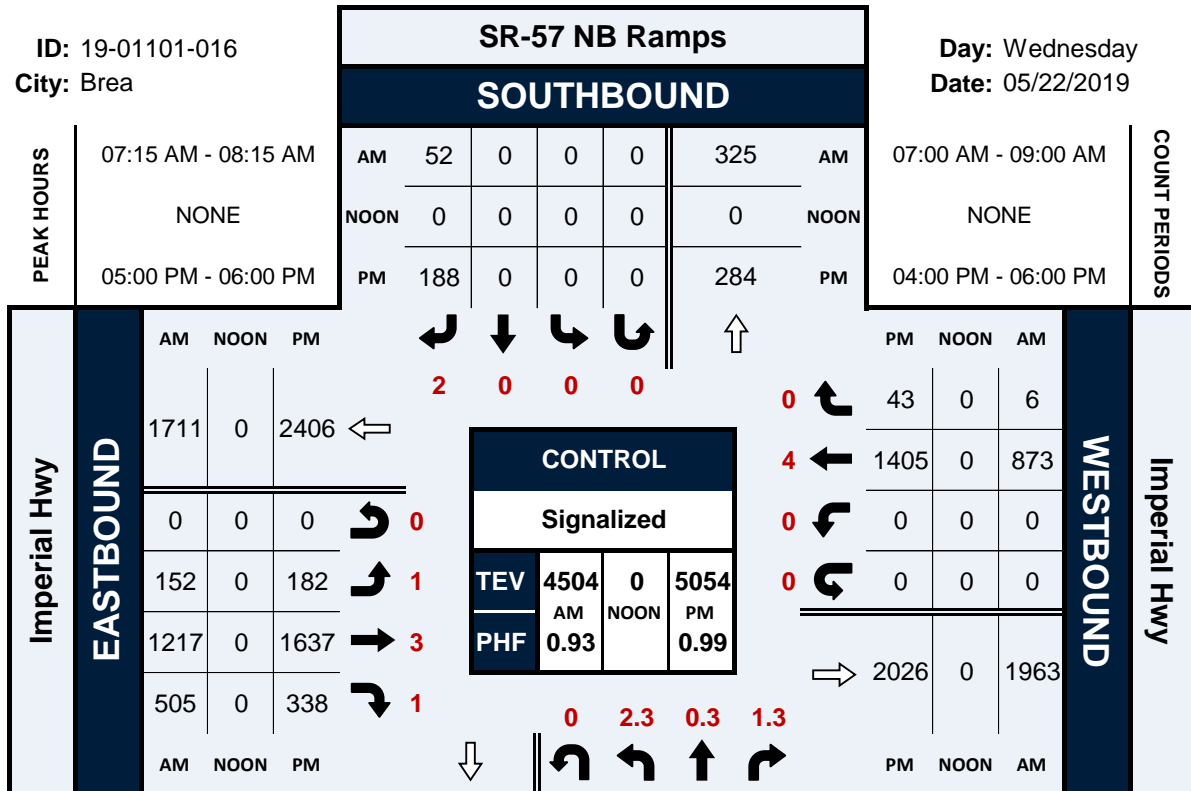
| NS/EW Streets:  | Total               |       |        |       |       |       |                |        |       |        |       |        |              |       |       |       |        |       |              |        |       |       |       |       | TOTAL |             |  |  |  |
|-----------------|---------------------|-------|--------|-------|-------|-------|----------------|--------|-------|--------|-------|--------|--------------|-------|-------|-------|--------|-------|--------------|--------|-------|-------|-------|-------|-------|-------------|--|--|--|
|                 | SR-57 NB Ramps      |       |        |       |       |       | SR-57 NB Ramps |        |       |        |       |        | Imperial Hwy |       |       |       |        |       | Imperial Hwy |        |       |       |       |       |       |             |  |  |  |
|                 | NORTHBOUND          |       |        |       |       |       | SOUTHBOUND     |        |       |        |       |        | EASTBOUND    |       |       |       |        |       | WESTBOUND    |        |       |       |       |       |       | SOUTHBOUND2 |  |  |  |
| AM              | NL                  | NT    | NR     | NU    | NT2   | SL    | ST             | SR     | SU    | SU2    | EL    | ET     | ER           | EU    | EL2   | WL    | WT     | WR    | WU           | WR2    | S2U   | S2L2  | S2T2  | S2R2  | S2U2  |             |  |  |  |
| 7:00 AM         | 152                 | 46    | 165    | 0     | 0     | 0     | 0              | 14     | 0     | 6      | 23    | 318    | 132          | 0     | 0     | 0     | 167    | 3     | 0            | 125    | 0     | 0     | 0     | 0     | 0     | 1151        |  |  |  |
| 7:15 AM         | 207                 | 50    | 192    | 0     | 0     | 0     | 0              | 16     | 0     | 17     | 29    | 312    | 133          | 0     | 0     | 0     | 177    | 2     | 0            | 105    | 0     | 0     | 0     | 0     | 0     | 1240        |  |  |  |
| 7:30 AM         | 245                 | 50    | 173    | 0     | 0     | 0     | 0              | 12     | 0     | 9      | 34    | 366    | 133          | 0     | 0     | 0     | 203    | 3     | 0            | 119    | 0     | 0     | 0     | 0     | 0     | 1347        |  |  |  |
| 7:45 AM         | 174                 | 43    | 204    | 0     | 1     | 0     | 0              | 12     | 0     | 7      | 65    | 264    | 122          | 0     | 0     | 0     | 240    | 1     | 0            | 111    | 0     | 0     | 0     | 0     | 0     | 1244        |  |  |  |
| 8:00 AM         | 160                 | 24    | 177    | 0     | 0     | 0     | 0              | 12     | 0     | 5      | 24    | 275    | 117          | 0     | 0     | 0     | 253    | 0     | 0            | 120    | 0     | 0     | 0     | 0     | 0     | 1167        |  |  |  |
| 8:15 AM         | 187                 | 24    | 187    | 0     | 1     | 0     | 0              | 12     | 0     | 13     | 15    | 302    | 109          | 0     | 0     | 0     | 200    | 3     | 0            | 124    | 0     | 0     | 0     | 0     | 0     | 1177        |  |  |  |
| 8:30 AM         | 171                 | 34    | 212    | 0     | 1     | 0     | 0              | 18     | 0     | 5      | 29    | 274    | 116          | 0     | 0     | 0     | 203    | 3     | 0            | 108    | 0     | 0     | 0     | 0     | 0     | 1174        |  |  |  |
| 8:45 AM         | 223                 | 28    | 203    | 0     | 0     | 0     | 0              | 15     | 0     | 9      | 39    | 242    | 97           | 0     | 0     | 0     | 226    | 4     | 0            | 93     | 0     | 0     | 0     | 0     | 0     | 1179        |  |  |  |
| TOTAL VOLUMES:  | 1519                | 299   | 1513   | 0     | 3     | 0     | 0              | 111    | 0     | 71     | 258   | 2353   | 959          | 0     | 0     | 0     | 1669   | 19    | 0            | 905    | 0     | 0     | 0     | 0     | 0     | 9679        |  |  |  |
| APPROACH %:     | 45.56%              | 8.97% | 45.38% | 0.00% | 0.09% | 0.00% | 0.00%          | 60.99% | 0.00% | 39.01% | 7.23% | 65.91% | 26.86%       | 0.00% | 0.00% | 0.00% | 64.37% | 0.73% | 0.00%        | 34.90% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |             |  |  |  |
| PEAK HR:        | 07:15 AM - 08:15 AM |       |        |       |       |       |                |        |       |        |       |        |              |       |       |       |        |       |              |        |       |       |       |       |       |             |  |  |  |
| PEAK HR VOL:    | 786                 | 167   | 746    | 0     | 1     | 0     | 0              | 52     | 0     | 38     | 152   | 1217   | 505          | 0     | 0     | 0     | 873    | 6     | 0            | 455    | 0     | 0     | 0     | 0     | 0     | 4998        |  |  |  |
| PEAK HR FACTOR: | 0.802               | 0.835 | 0.914  | 0.000 | 0.250 | 0.000 | 0.000          | 0.813  | 0.000 | 0.559  | 0.585 | 0.831  | 0.949        | 0.000 | 0.000 | 0.000 | 0.863  | 0.500 | 0.000        | 0.948  | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.928       |  |  |  |
|                 |                     |       |        |       |       |       |                |        |       |        |       |        |              |       |       |       |        |       |              |        |       |       |       |       |       |             |  |  |  |
| PM              | 2.3                 | 0.3   | 1.3    | 0     | 0     | 0     | 0              | 2      | 0     | 0      | 1     | 3      | 1            | 0     | 0     | 0     | 4      | 0     | 0            | 0      | 0     | 0     | 0     | 0     | 0     |             |  |  |  |
| 4:00 PM         | 258                 | 15    | 128    | 0     | 1     | 0     | 0              | 51     | 0     | 8      | 38    | 392    | 44           | 0     | 0     | 0     | 327    | 9     | 0            | 88     | 0     | 0     | 0     | 0     | 0     | 1359        |  |  |  |
| 4:15 PM         | 195                 | 12    | 112    | 0     | 2     | 0     | 0              | 30     | 0     | 14     | 37    | 417    | 70           | 0     | 0     | 0     | 345    | 14    | 0            | 133    | 0     | 0     | 0     | 0     | 0     | 1381        |  |  |  |
| 4:30 PM         | 188                 | 21    | 117    | 0     | 1     | 0     | 0              | 39     | 0     | 13     | 48    | 358    | 63           | 0     | 0     | 0     | 371    | 6     | 0            | 149    | 0     | 0     | 0     | 0     | 0     | 1374        |  |  |  |
| 4:45 PM         | 215                 | 26    | 120    | 0     | 3     | 0     | 0              | 51     | 0     | 17     | 45    | 327    | 55           | 0     | 0     | 0     | 393    | 11    | 0            | 174    | 0     | 0     | 0     | 0     | 0     | 1437        |  |  |  |
| 5:00 PM         | 200                 | 6     | 125    | 0     | 6     | 0     | 0              | 51     | 0     | 15     | 40    | 394    | 79           | 0     | 0     | 0     | 366    | 8     | 0            | 176    | 0     | 0     | 0     | 0     | 0     | 1466        |  |  |  |
| 5:15 PM         | 205                 | 15    | 94     | 0     | 6     | 0     | 0              | 37     | 0     | 18     | 43    | 425    | 99           | 0     | 0     | 0     | 332    | 12    | 0            | 201    | 0     | 0     | 0     | 0     | 0     | 1477        |  |  |  |
| 5:30 PM         | 208                 | 16    | 82     | 0     | 4     | 0     | 0              | 59     | 0     | 10     | 47    | 422    | 80           | 0     | 0     | 0     | 347    | 8     | 0            | 180    | 0     | 0     | 0     | 0     | 0     | 1463        |  |  |  |
| 5:45 PM         | 200                 | 22    | 98     | 0     | 2     | 0     | 0              | 41     | 0     | 13     | 52    | 396    | 80           | 0     | 0     | 0     | 360    | 15    | 0            | 181    | 0     | 0     | 0     | 0     | 0     | 1460        |  |  |  |
| TOTAL VOLUMES:  | 1669                | 133   | 866    | 0     | 25    | 0     | 0              | 359    | 0     | 108    | 350   | 3131   | 570          | 0     | 0     | 0     | 2841   | 83    | 0            | 1282   | 0     | 0     | 0     | 0     | 0     | 11417       |  |  |  |
| APPROACH %:     | 61.98%              | 4.94% | 32.16% | 0.00% | 0.93% | 0.00% | 0.00%          | 76.87% | 0.00% | 23.13% | 8.64% | 77.29% | 14.07%       | 0.00% | 0.00% | 0.00% | 67.55% | 1.97% | 0.00%        | 30.48% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |             |  |  |  |
| PEAK HR:        | 05:00 PM - 06:00 PM |       |        |       |       |       |                |        |       |        |       |        |              |       |       |       |        |       |              |        |       |       |       |       |       |             |  |  |  |
| PEAK HR VOL:    | 813                 | 59    | 389    | 0     | 18    | 0     | 0              | 188    | 0     | 56     | 182   | 1637   | 338          | 0     | 0     | 0     | 1405   | 43    | 0            | 738    | 0     | 0     | 0     | 0     | 0     | 5866        |  |  |  |
| PEAK HR FACTOR: | 0.977               | 0.670 | 0.778  | 0.000 | 0.750 | 0.000 | 0.000          | 0.797  | 0.000 | 0.778  | 0.875 | 0.963  | 0.854        | 0.000 | 0.000 | 0.000 | 0.960  | 0.717 | 0.000        | 0.918  | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.993       |  |  |  |

# SR-57 NB Ramps & Imperial Hwy

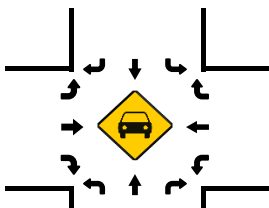
## Peak Hour Turning Movement Count

ID: 19-01101-016  
City: Brea

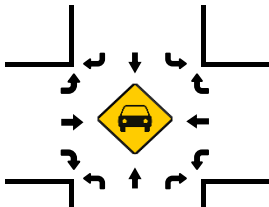
Day: Wednesday  
Date: 05/22/2019



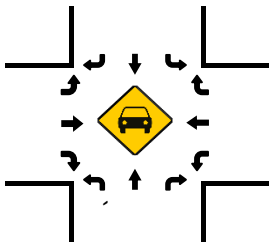
Total Vehicles (AM)



Total Vehicles (NOON)



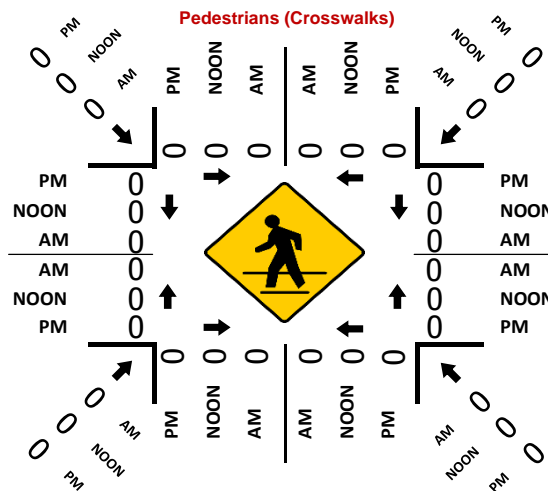
Total Vehicles (PM)



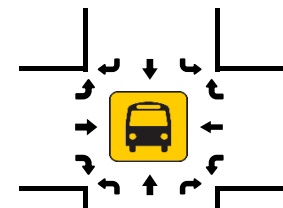
|      |     |   |     |     |     |      |
|------|-----|---|-----|-----|-----|------|
| PM   | 338 | 0 | 813 | 59  | 389 | PM   |
| NOON | 0   | 0 | 0   | 0   | 0   | NOON |
| AM   | 505 | 0 | 786 | 167 | 746 | AM   |

### NORTHBOUND

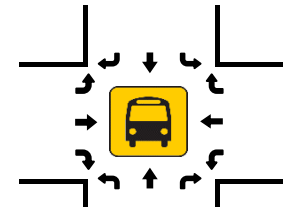
### SR-57 NB Ramps



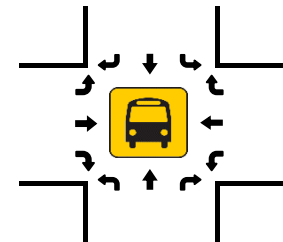
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Associated Rd & Imperial Hwy  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-009  
 Date: 11/13/2018

### Total

| NS/EW Streets:          | Associated Rd       |        |        |       | Associated Rd |        |        |       | Imperial Hwy |        |       |       | Imperial Hwy |        |       |       | TOTAL        |
|-------------------------|---------------------|--------|--------|-------|---------------|--------|--------|-------|--------------|--------|-------|-------|--------------|--------|-------|-------|--------------|
|                         | NORTHBOUND          |        |        |       | SOUTHBOUND    |        |        |       | EASTBOUND    |        |       |       | WESTBOUND    |        |       |       |              |
| AM                      | NL                  | NT     | NR     | NU    | SL            | ST     | SR     | SU    | EL           | ET     | ER    | EU    | WL           | WT     | WR    | WU    | TOTAL        |
| 7:00 AM                 | 34                  | 29     | 10     | 0     | 27            | 78     | 24     | 0     | 35           | 385    | 21    | 0     | 15           | 278    | 10    | 0     | 946          |
| 7:15 AM                 | 50                  | 32     | 12     | 0     | 32            | 65     | 26     | 0     | 37           | 376    | 32    | 1     | 23           | 297    | 10    | 0     | 993          |
| 7:30 AM                 | 33                  | 44     | 13     | 0     | 24            | 86     | 37     | 0     | 32           | 386    | 27    | 1     | 20           | 347    | 17    | 0     | 1067         |
| 7:45 AM                 | 28                  | 62     | 21     | 0     | 29            | 66     | 31     | 0     | 38           | 464    | 29    | 0     | 12           | 388    | 22    | 0     | 1190         |
| 8:00 AM                 | 43                  | 47     | 15     | 0     | 47            | 68     | 34     | 1     | 38           | 422    | 17    | 0     | 23           | 378    | 21    | 0     | 1154         |
| 8:15 AM                 | 32                  | 39     | 17     | 0     | 36            | 85     | 33     | 1     | 29           | 435    | 19    | 0     | 30           | 348    | 18    | 0     | 1122         |
| 8:30 AM                 | 38                  | 20     | 14     | 0     | 50            | 68     | 30     | 0     | 28           | 464    | 26    | 0     | 21           | 286    | 14    | 0     | 1059         |
| 8:45 AM                 | 40                  | 33     | 33     | 0     | 43            | 51     | 17     | 0     | 25           | 418    | 18    | 1     | 21           | 284    | 17    | 0     | 1001         |
| <b>TOTAL VOLUMES :</b>  | 298                 | 306    | 135    | 0     | 288           | 567    | 232    | 2     | 262          | 3350   | 189   | 3     | 165          | 2606   | 129   | 0     | 8532         |
| <b>APPROACH %'s :</b>   | 40.32%              | 41.41% | 18.27% | 0.00% | 26.45%        | 52.07% | 21.30% | 0.18% | 6.89%        | 88.07% | 4.97% | 0.08% | 5.69%        | 89.86% | 4.45% | 0.00% |              |
| <b>PEAK HR :</b>        | 07:30 AM - 08:30 AM |        |        |       |               |        |        |       |              |        |       |       |              |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 136                 | 192    | 66     | 0     | 136           | 305    | 135    | 2     | 137          | 1707   | 92    | 1     | 85           | 1461   | 78    | 0     | 4533         |
| <b>PEAK HR FACTOR :</b> | 0.791               | 0.774  | 0.786  | 0.000 | 0.723         | 0.887  | 0.912  | 0.500 | 0.901        | 0.920  | 0.793 | 0.250 | 0.708        | 0.941  | 0.886 | 0.000 | 0.952        |
|                         | 0.887               |        |        |       | 0.932         |        |        |       | 0.912        |        |       |       | 0.962        |        |       |       |              |
| PM                      | NL                  | NT     | NR     | NU    | SL            | ST     | SR     | SU    | EL           | ET     | ER    | EU    | WL           | WT     | WR    | WU    | TOTAL        |
| 4:00 PM                 | 36                  | 48     | 23     | 0     | 60            | 60     | 44     | 1     | 47           | 389    | 32    | 1     | 33           | 392    | 29    | 0     | 1195         |
| 4:15 PM                 | 50                  | 57     | 24     | 0     | 49            | 76     | 58     | 1     | 49           | 415    | 35    | 0     | 32           | 378    | 39    | 0     | 1263         |
| 4:30 PM                 | 48                  | 56     | 16     | 0     | 55            | 67     | 37     | 0     | 45           | 406    | 22    | 0     | 29           | 412    | 46    | 1     | 1240         |
| 4:45 PM                 | 52                  | 41     | 17     | 0     | 75            | 97     | 69     | 0     | 55           | 410    | 31    | 0     | 37           | 362    | 55    | 0     | 1301         |
| 5:00 PM                 | 52                  | 56     | 21     | 1     | 73            | 87     | 52     | 0     | 56           | 383    | 29    | 1     | 38           | 346    | 36    | 0     | 1231         |
| 5:15 PM                 | 55                  | 67     | 20     | 0     | 60            | 63     | 48     | 0     | 65           | 431    | 34    | 0     | 45           | 422    | 33    | 0     | 1343         |
| 5:30 PM                 | 39                  | 76     | 20     | 0     | 62            | 76     | 37     | 0     | 56           | 424    | 34    | 0     | 42           | 420    | 34    | 0     | 1320         |
| 5:45 PM                 | 50                  | 48     | 21     | 1     | 63            | 62     | 42     | 0     | 62           | 433    | 41    | 1     | 32           | 383    | 41    | 0     | 1280         |
| <b>TOTAL VOLUMES :</b>  | 382                 | 449    | 162    | 2     | 497           | 588    | 387    | 2     | 435          | 3291   | 258   | 3     | 288          | 3115   | 313   | 1     | 10173        |
| <b>APPROACH %'s :</b>   | 38.39%              | 45.13% | 16.28% | 0.20% | 33.72%        | 39.89% | 26.26% | 0.14% | 10.91%       | 82.54% | 6.47% | 0.08% | 7.75%        | 83.80% | 8.42% | 0.03% |              |
| <b>PEAK HR :</b>        | 04:45 PM - 05:45 PM |        |        |       |               |        |        |       |              |        |       |       |              |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 198                 | 240    | 78     | 1     | 270           | 323    | 206    | 0     | 232          | 1648   | 128   | 1     | 162          | 1550   | 158   | 0     | 5195         |
| <b>PEAK HR FACTOR :</b> | 0.900               | 0.789  | 0.929  | 0.250 | 0.900         | 0.832  | 0.746  | 0.000 | 0.892        | 0.956  | 0.941 | 0.250 | 0.900        | 0.918  | 0.718 | 0.000 | 0.967        |
|                         | 0.910               |        |        |       | 0.829         |        |        |       | 0.948        |        |       |       | 0.935        |        |       |       |              |

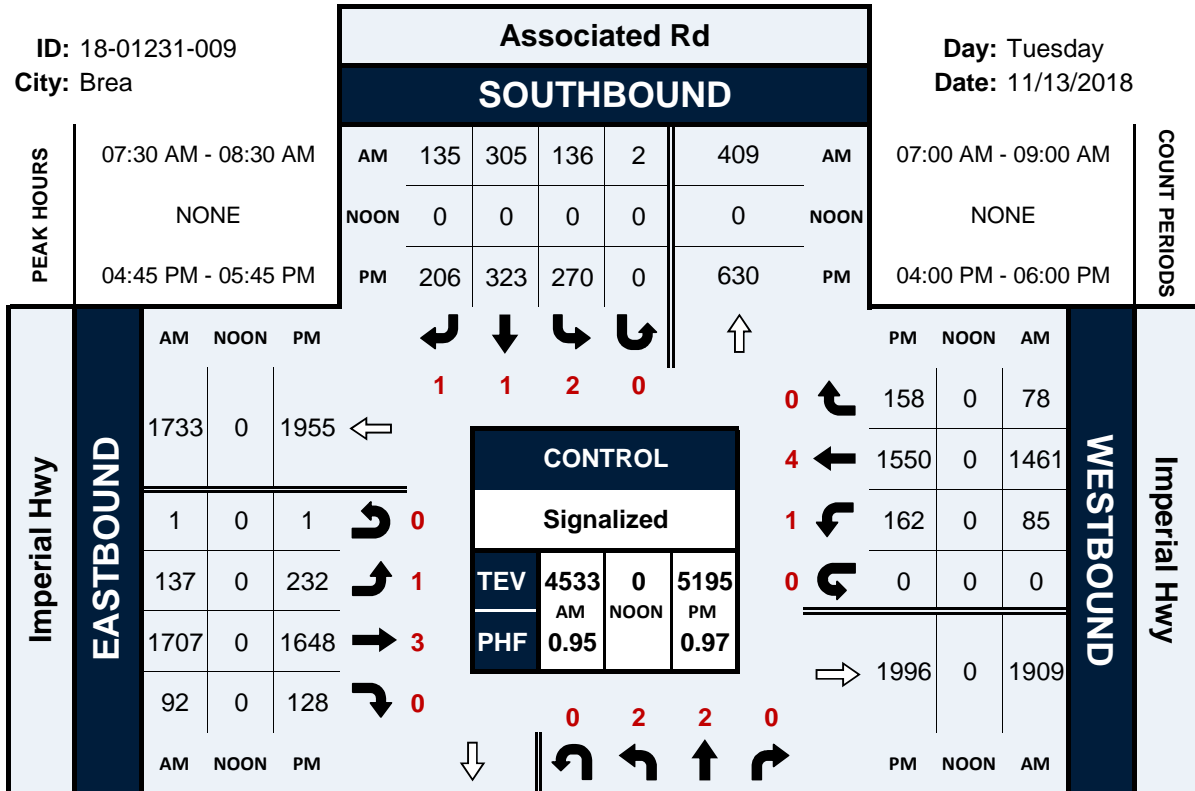


# Associated Rd & Imperial Hwy

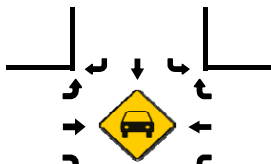
## Peak Hour Turning Movement Count

ID: 18-01231-009  
City: Brea

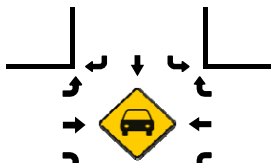
Day: Tuesday  
Date: 11/13/2018



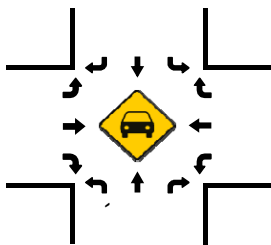
Total Vehicles (AM)



Total Vehicles (Noon)



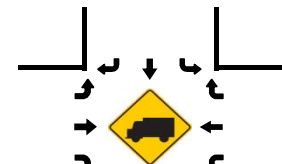
Total Vehicles (PM)



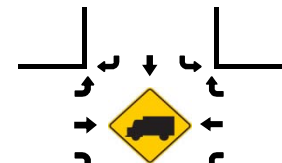
|      |     |   |     |     |    |      |
|------|-----|---|-----|-----|----|------|
| PM   | 614 | 1 | 198 | 240 | 78 | PM   |
| NOON | 0   | 0 | 0   | 0   | 0  | NOON |
| AM   | 482 | 0 | 136 | 192 | 66 | AM   |

**Associated Rd NORTHBOUND**

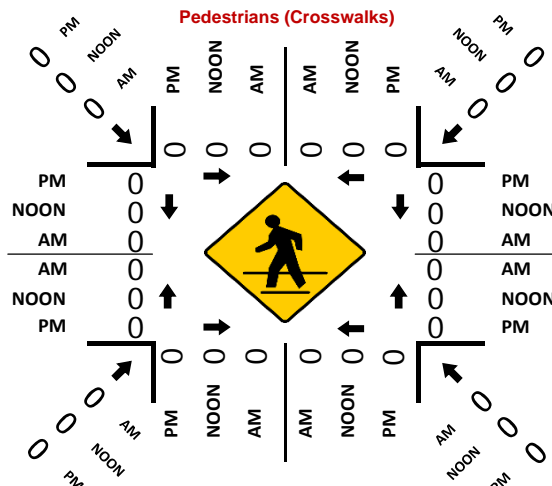
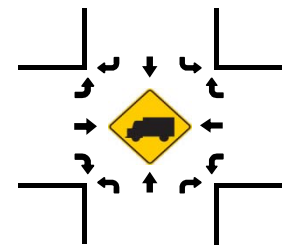
2axle (AM)



2axle (NOON)



2axle (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

Location: Castlegate Ln/Placentia Ave & Imperial Hwy  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-010  
 Date: 11/13/2018

**Total**

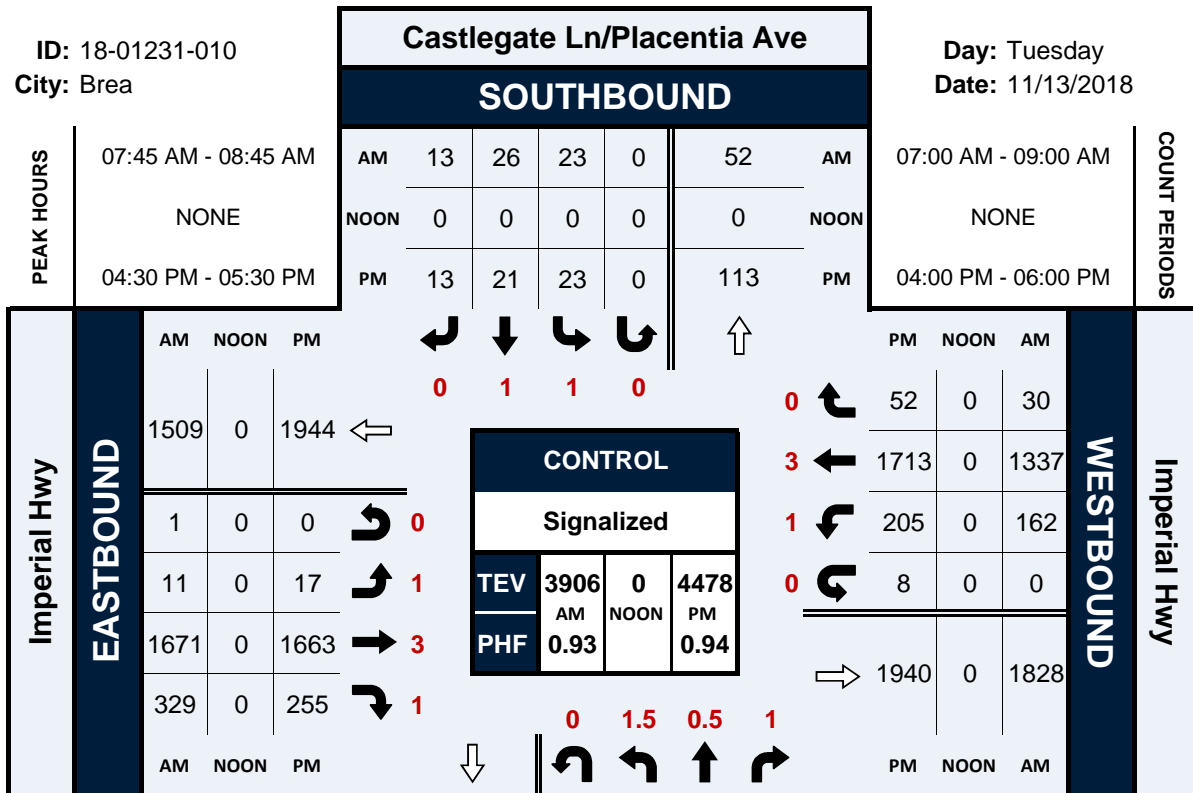
| NS/EW Streets:          | Castlegate Ln/Placentia Ave |           |         |         | Castlegate Ln/Placentia Ave |         |         |         | Imperial Hwy |         |         |         | Imperial Hwy |         |         |         | TOTAL |
|-------------------------|-----------------------------|-----------|---------|---------|-----------------------------|---------|---------|---------|--------------|---------|---------|---------|--------------|---------|---------|---------|-------|
|                         | NORTHBOUND                  |           |         |         | SOUTHBOUND                  |         |         |         | EASTBOUND    |         |         |         | WESTBOUND    |         |         |         |       |
| AM                      | 1.5<br>NL                   | 0.5<br>NT | 1<br>NR | 0<br>NU | 1<br>SL                     | 1<br>ST | 0<br>SR | 0<br>SU | 1<br>EL      | 3<br>ET | 1<br>ER | 0<br>EU | 1<br>WL      | 3<br>WT | 0<br>WR | 0<br>WU |       |
| 7:00 AM                 | 27                          | 1         | 19      | 0       | 6                           | 1       | 0       | 0       | 0            | 363     | 55      | 0       | 21           | 289     | 5       | 0       | 787   |
| 7:15 AM                 | 30                          | 5         | 27      | 0       | 8                           | 6       | 4       | 0       | 0            | 356     | 50      | 0       | 30           | 292     | 5       | 0       | 813   |
| 7:30 AM                 | 49                          | 5         | 40      | 0       | 4                           | 2       | 5       | 0       | 1            | 362     | 85      | 0       | 34           | 312     | 1       | 0       | 900   |
| 7:45 AM                 | 54                          | 5         | 32      | 0       | 6                           | 12      | 5       | 0       | 4            | 429     | 78      | 1       | 42           | 377     | 9       | 0       | 1054  |
| 8:00 AM                 | 25                          | 3         | 24      | 0       | 5                           | 6       | 2       | 0       | 2            | 415     | 83      | 0       | 46           | 346     | 7       | 0       | 964   |
| 8:15 AM                 | 42                          | 1         | 30      | 0       | 4                           | 5       | 3       | 0       | 2            | 392     | 77      | 0       | 26           | 338     | 9       | 0       | 929   |
| 8:30 AM                 | 37                          | 2         | 48      | 0       | 8                           | 3       | 3       | 0       | 3            | 435     | 91      | 0       | 48           | 276     | 5       | 0       | 959   |
| 8:45 AM                 | 34                          | 1         | 32      | 0       | 8                           | 5       | 3       | 0       | 2            | 424     | 72      | 0       | 32           | 292     | 7       | 1       | 913   |
| <b>TOTAL VOLUMES :</b>  | NL                          | NT        | NR      | NU      | SL                          | ST      | SR      | SU      | EL           | ET      | ER      | EU      | WL           | WT      | WR      | WU      | TOTAL |
| <b>APPROACH %'s :</b>   | 52.01%                      | 4.01%     | 43.98%  | 0.00%   | 42.98%                      | 35.09%  | 21.93%  | 0.00%   | 0.37%        | 83.98%  | 15.63%  | 0.03%   | 9.79%        | 88.49%  | 1.68%   | 0.04%   | 7319  |
| <b>PEAK HR :</b>        | 07:45 AM - 08:45 AM         |           |         |         |                             |         |         |         |              |         |         |         |              |         |         |         | TOTAL |
| <b>PEAK HR VOL :</b>    | 158                         | 11        | 134     | 0       | 23                          | 26      | 13      | 0       | 11           | 1671    | 329     | 1       | 162          | 1337    | 30      | 0       | 3906  |
| <b>PEAK HR FACTOR :</b> | 0.731                       | 0.550     | 0.698   | 0.000   | 0.719                       | 0.542   | 0.650   | 0.000   | 0.688        | 0.960   | 0.904   | 0.250   | 0.844        | 0.887   | 0.833   | 0.000   | 0.926 |
|                         | 0.832                       |           |         |         | 0.674                       |         |         |         | 0.951        |         |         |         | 0.893        |         |         |         |       |
| PM                      | 1.5<br>NL                   | 0.5<br>NT | 1<br>NR | 0<br>NU | 1<br>SL                     | 1<br>ST | 0<br>SR | 0<br>SU | 1<br>EL      | 3<br>ET | 1<br>ER | 0<br>EU | 1<br>WL      | 3<br>WT | 0<br>WR | 0<br>WU |       |
| 4:00 PM                 | 41                          | 6         | 35      | 0       | 8                           | 6       | 2       | 0       | 3            | 409     | 61      | 1       | 40           | 425     | 12      | 2       | 1051  |
| 4:15 PM                 | 50                          | 8         | 54      | 0       | 6                           | 3       | 5       | 0       | 3            | 421     | 47      | 0       | 40           | 433     | 7       | 1       | 1078  |
| 4:30 PM                 | 66                          | 9         | 56      | 0       | 2                           | 3       | 2       | 0       | 5            | 411     | 54      | 0       | 48           | 447     | 7       | 0       | 1110  |
| 4:45 PM                 | 47                          | 4         | 55      | 0       | 8                           | 12      | 2       | 0       | 7            | 425     | 59      | 0       | 48           | 405     | 9       | 0       | 1081  |
| 5:00 PM                 | 49                          | 11        | 63      | 0       | 7                           | 3       | 5       | 0       | 3            | 398     | 65      | 0       | 56           | 417     | 14      | 4       | 1095  |
| 5:15 PM                 | 56                          | 20        | 72      | 0       | 6                           | 3       | 4       | 0       | 2            | 429     | 77      | 0       | 53           | 444     | 22      | 4       | 1192  |
| 5:30 PM                 | 41                          | 7         | 54      | 0       | 5                           | 2       | 2       | 0       | 4            | 421     | 77      | 0       | 38           | 414     | 15      | 1       | 1081  |
| 5:45 PM                 | 44                          | 10        | 41      | 0       | 7                           | 4       | 2       | 0       | 0            | 445     | 56      | 2       | 48           | 404     | 13      | 1       | 1077  |
| <b>TOTAL VOLUMES :</b>  | NL                          | NT        | NR      | NU      | SL                          | ST      | SR      | SU      | EL           | ET      | ER      | EU      | WL           | WT      | WR      | WU      | TOTAL |
| <b>APPROACH %'s :</b>   | 43.83%                      | 8.34%     | 47.83%  | 0.00%   | 44.95%                      | 33.03%  | 22.02%  | 0.00%   | 0.69%        | 86.46%  | 12.77%  | 0.08%   | 9.58%        | 87.53%  | 2.56%   | 0.34%   | 8765  |
| <b>PEAK HR :</b>        | 04:30 PM - 05:30 PM         |           |         |         |                             |         |         |         |              |         |         |         |              |         |         |         | TOTAL |
| <b>PEAK HR VOL :</b>    | 218                         | 44        | 246     | 0       | 23                          | 21      | 13      | 0       | 17           | 1663    | 255     | 0       | 205          | 1713    | 52      | 8       | 4478  |
| <b>PEAK HR FACTOR :</b> | 0.826                       | 0.550     | 0.854   | 0.000   | 0.719                       | 0.438   | 0.650   | 0.000   | 0.607        | 0.969   | 0.828   | 0.000   | 0.915        | 0.958   | 0.591   | 0.500   | 0.939 |
|                         | 0.858                       |           |         |         | 0.648                       |         |         |         | 0.952        |         |         |         | 0.946        |         |         |         |       |

# Castlegate Ln/Placentia Ave & Imperial Hwy

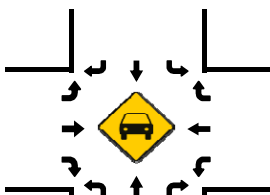
## Peak Hour Turning Movement Count

ID: 18-01231-010  
City: Brea

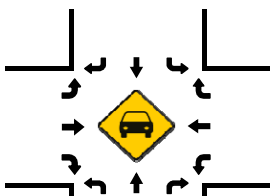
Day: Tuesday  
Date: 11/13/2018



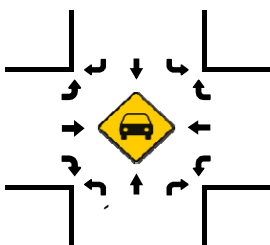
Total Vehicles (AM)



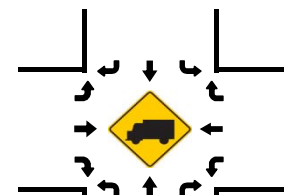
Total Vehicles (Noon)



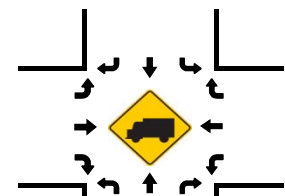
Total Vehicles (PM)



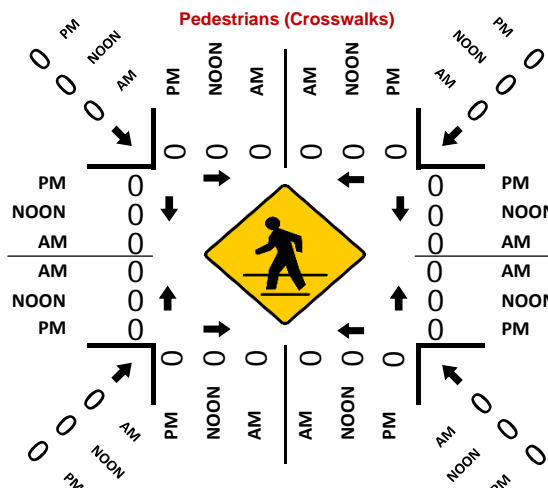
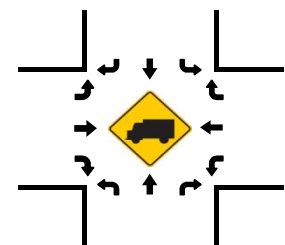
2axle (AM)



2axle (NOON)



2axle (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

**Location:** N Kraemer Blvd & Imperial Hwy  
**City:** Brea  
**Control:** Signalized

**Project ID:** 19-01101-017  
**Date:** 5/22/2019

### Total

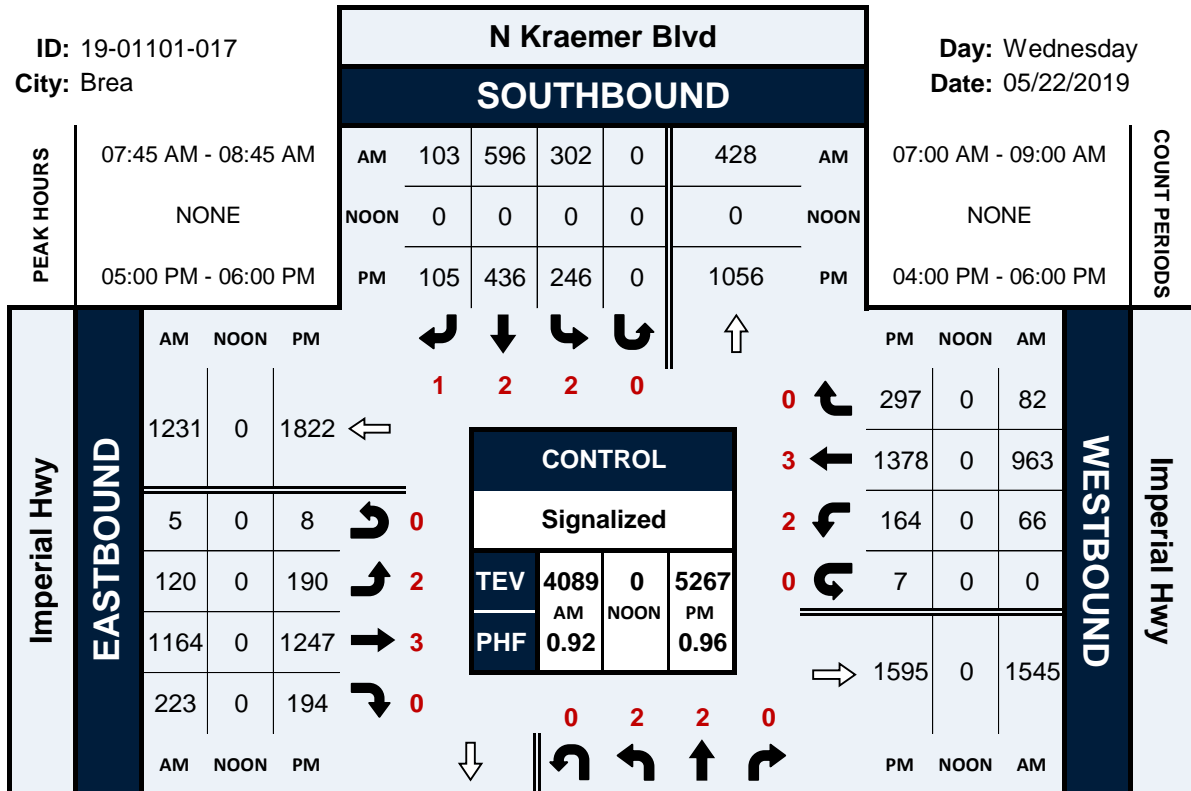
| NS/EW Streets:          | N Kraemer Blvd      |        |        |       | N Kraemer Blvd |        |        |       | Imperial Hwy |        |        |       | Imperial Hwy |        |        |       | TOTAL |
|-------------------------|---------------------|--------|--------|-------|----------------|--------|--------|-------|--------------|--------|--------|-------|--------------|--------|--------|-------|-------|
|                         | NORTHBOUND          |        |        |       | SOUTHBOUND     |        |        |       | EASTBOUND    |        |        |       | WESTBOUND    |        |        |       |       |
| AM                      | NL                  | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    |       |
| 7:00 AM                 | 32                  | 45     | 9      | 0     | 64             | 125    | 20     | 0     | 33           | 298    | 49     | 0     | 10           | 176    | 18     | 0     | 879   |
| 7:15 AM                 | 29                  | 36     | 7      | 0     | 72             | 153    | 22     | 0     | 38           | 272    | 52     | 0     | 21           | 226    | 13     | 0     | 941   |
| 7:30 AM                 | 33                  | 41     | 11     | 0     | 80             | 177    | 19     | 0     | 30           | 289    | 47     | 0     | 14           | 205    | 20     | 0     | 966   |
| 7:45 AM                 | 47                  | 76     | 22     | 0     | 73             | 163    | 32     | 0     | 36           | 337    | 50     | 1     | 8            | 251    | 21     | 0     | 1117  |
| 8:00 AM                 | 34                  | 49     | 21     | 0     | 89             | 155    | 24     | 0     | 30           | 296    | 65     | 1     | 19           | 234    | 25     | 0     | 1042  |
| 8:15 AM                 | 35                  | 55     | 14     | 0     | 61             | 127    | 20     | 0     | 31           | 248    | 56     | 1     | 22           | 246    | 16     | 0     | 932   |
| 8:30 AM                 | 44                  | 46     | 22     | 0     | 79             | 151    | 27     | 0     | 23           | 283    | 52     | 2     | 17           | 232    | 20     | 0     | 998   |
| 8:45 AM                 | 49                  | 41     | 16     | 2     | 72             | 107    | 15     | 0     | 28           | 325    | 41     | 2     | 11           | 210    | 15     | 0     | 934   |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    | TOTAL |
| <b>APPROACH %'s :</b>   | 303                 | 389    | 122    | 2     | 590            | 1158   | 179    | 0     | 249          | 2348   | 412    | 7     | 122          | 1780   | 148    | 0     | 7809  |
|                         | 37.13%              | 47.67% | 14.95% | 0.25% | 30.62%         | 60.09% | 9.29%  | 0.00% | 8.26%        | 77.85% | 13.66% | 0.23% | 5.95%        | 86.83% | 7.22%  | 0.00% |       |
| <b>PEAK HR :</b>        | 07:45 AM - 08:45 AM |        |        |       |                |        |        |       |              |        |        |       |              |        |        |       | TOTAL |
| <b>PEAK HR VOL :</b>    | 160                 | 226    | 79     | 0     | 302            | 596    | 103    | 0     | 120          | 1164   | 223    | 5     | 66           | 963    | 82     | 0     | 4089  |
| <b>PEAK HR FACTOR :</b> | 0.851               | 0.743  | 0.898  | 0.000 | 0.848          | 0.914  | 0.805  | 0.000 | 0.833        | 0.864  | 0.858  | 0.625 | 0.750        | 0.959  | 0.820  | 0.000 | 0.915 |
|                         | 0.802               |        |        |       | 0.934          |        |        |       | 0.892        |        |        |       | 0.978        |        |        |       |       |
| PM                      | NL                  | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    |       |
| 4:00 PM                 | 61                  | 99     | 18     | 0     | 54             | 128    | 27     | 1     | 20           | 264    | 31     | 0     | 30           | 246    | 41     | 0     | 1020  |
| 4:15 PM                 | 54                  | 85     | 21     | 0     | 65             | 127    | 27     | 2     | 29           | 307    | 51     | 0     | 22           | 290    | 35     | 1     | 1116  |
| 4:30 PM                 | 70                  | 130    | 20     | 0     | 69             | 129    | 29     | 0     | 39           | 334    | 39     | 3     | 35           | 337    | 67     | 2     | 1303  |
| 4:45 PM                 | 76                  | 137    | 19     | 0     | 50             | 113    | 28     | 0     | 47           | 290    | 47     | 2     | 44           | 350    | 67     | 2     | 1272  |
| 5:00 PM                 | 90                  | 115    | 28     | 0     | 46             | 106    | 28     | 0     | 46           | 301    | 54     | 3     | 42           | 322    | 62     | 1     | 1244  |
| 5:15 PM                 | 85                  | 141    | 20     | 0     | 52             | 113    | 24     | 0     | 53           | 325    | 47     | 1     | 38           | 343    | 63     | 1     | 1306  |
| 5:30 PM                 | 79                  | 158    | 22     | 0     | 77             | 125    | 27     | 0     | 45           | 323    | 48     | 3     | 50           | 338    | 74     | 2     | 1371  |
| 5:45 PM                 | 77                  | 155    | 25     | 0     | 71             | 92     | 26     | 0     | 46           | 298    | 45     | 1     | 34           | 375    | 98     | 3     | 1346  |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT     | NR     | NU    | SL             | ST     | SR     | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    | TOTAL |
| <b>APPROACH %'s :</b>   | 592                 | 1020   | 173    | 0     | 484            | 933    | 216    | 3     | 325          | 2442   | 362    | 13    | 295          | 2601   | 507    | 12    | 9978  |
|                         | 33.17%              | 57.14% | 9.69%  | 0.00% | 29.58%         | 57.03% | 13.20% | 0.18% | 10.34%       | 77.72% | 11.52% | 0.41% | 8.64%        | 76.16% | 14.85% | 0.35% |       |
| <b>PEAK HR :</b>        | 05:00 PM - 06:00 PM |        |        |       |                |        |        |       |              |        |        |       |              |        |        |       | TOTAL |
| <b>PEAK HR VOL :</b>    | 331                 | 569    | 95     | 0     | 246            | 436    | 105    | 0     | 190          | 1247   | 194    | 8     | 164          | 1378   | 297    | 7     | 5267  |
| <b>PEAK HR FACTOR :</b> | 0.919               | 0.900  | 0.848  | 0.000 | 0.799          | 0.872  | 0.938  | 0.000 | 0.896        | 0.959  | 0.898  | 0.667 | 0.820        | 0.919  | 0.758  | 0.583 | 0.960 |
|                         | 0.960               |        |        |       | 0.859          |        |        |       | 0.962        |        |        |       | 0.905        |        |        |       |       |

# N Kraemer Blvd & Imperial Hwy

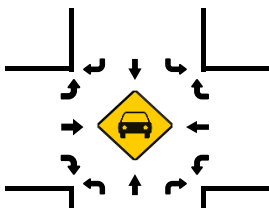
## Peak Hour Turning Movement Count

ID: 19-01101-017  
City: Brea

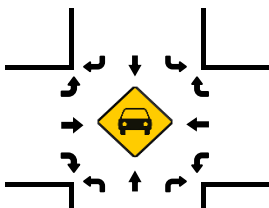
Day: Wednesday  
Date: 05/22/2019



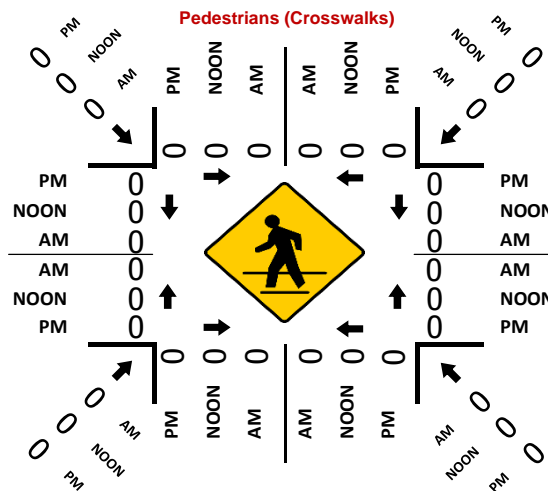
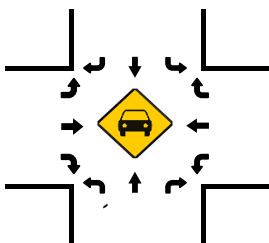
Total Vehicles (AM)



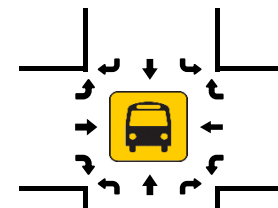
Total Vehicles (NOON)



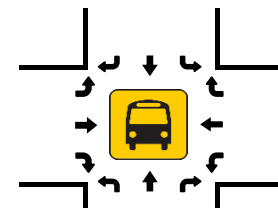
Total Vehicles (PM)



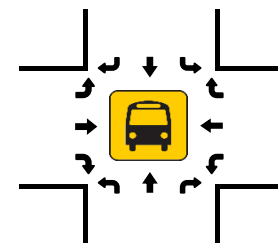
Total Vehicles (AM)



Total Vehicles (NOON)



Total Vehicles (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: Valencia Ave & Imperial Hwy  
 City: Brea  
 Control: Signalized

Project ID: 18-01231-022  
 Date: 11/13/2018

### Total

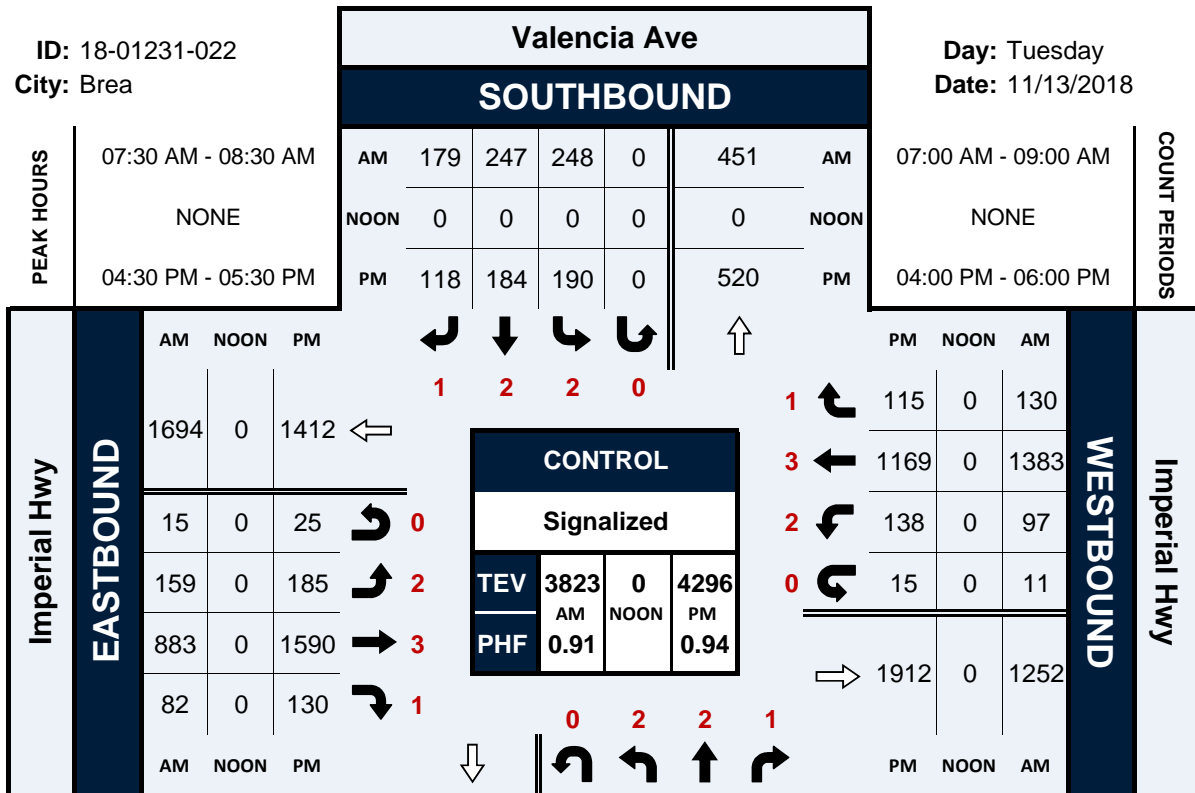
| NS/EW Streets:          | Valencia Ave        |        |        |       | Valencia Ave |        |        |       | Imperial Hwy |        |       |       | Imperial Hwy |        |       |       | TOTAL        |
|-------------------------|---------------------|--------|--------|-------|--------------|--------|--------|-------|--------------|--------|-------|-------|--------------|--------|-------|-------|--------------|
|                         | NORTHBOUND          |        |        |       | SOUTHBOUND   |        |        |       | EASTBOUND    |        |       |       | WESTBOUND    |        |       |       |              |
| AM                      | 2                   | 2      | 1      | 0     | 2            | 2      | 1      | 0     | 2            | 3      | 1     | 0     | 2            | 3      | 1     | 0     |              |
|                         | NL                  | NT     | NR     | NU    | SL           | ST     | SR     | SU    | EL           | ET     | ER    | EU    | WL           | WT     | WR    | WU    |              |
| 7:00 AM                 | 16                  | 30     | 15     | 0     | 32           | 57     | 42     | 0     | 24           | 235    | 19    | 3     | 15           | 232    | 24    | 0     | 744          |
| 7:15 AM                 | 34                  | 20     | 15     | 0     | 51           | 54     | 39     | 0     | 28           | 236    | 13    | 2     | 20           | 298    | 36    | 2     | 848          |
| 7:30 AM                 | 26                  | 40     | 31     | 0     | 76           | 72     | 39     | 0     | 37           | 208    | 24    | 5     | 28           | 315    | 18    | 1     | 920          |
| 7:45 AM                 | 30                  | 47     | 40     | 0     | 66           | 60     | 43     | 0     | 48           | 250    | 16    | 7     | 22           | 383    | 37    | 5     | 1054         |
| 8:00 AM                 | 28                  | 41     | 21     | 0     | 63           | 53     | 57     | 0     | 34           | 246    | 22    | 2     | 16           | 340    | 30    | 0     | 953          |
| 8:15 AM                 | 33                  | 34     | 18     | 0     | 43           | 62     | 40     | 0     | 40           | 179    | 20    | 1     | 31           | 345    | 45    | 5     | 896          |
| 8:30 AM                 | 17                  | 19     | 22     | 0     | 40           | 45     | 40     | 0     | 48           | 246    | 21    | 5     | 27           | 288    | 25    | 3     | 846          |
| 8:45 AM                 | 32                  | 31     | 28     | 0     | 43           | 58     | 60     | 0     | 37           | 183    | 26    | 6     | 31           | 277    | 23    | 4     | 839          |
| <b>TOTAL VOLUMES :</b>  | 216                 | 262    | 190    | 0     | 414          | 461    | 360    | 0     | 296          | 1783   | 161   | 31    | 190          | 2478   | 238   | 20    | 7100         |
| <b>APPROACH %'s :</b>   | 32.34%              | 39.22% | 28.44% | 0.00% | 33.52%       | 37.33% | 29.15% | 0.00% | 13.03%       | 78.51% | 7.09% | 1.37% | 6.49%        | 84.69% | 8.13% | 0.68% |              |
| <b>PEAK HR :</b>        | 07:30 AM - 08:30 AM |        |        |       |              |        |        |       |              |        |       |       |              |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 117                 | 162    | 110    | 0     | 248          | 247    | 179    | 0     | 159          | 883    | 82    | 15    | 97           | 1383   | 130   | 11    | 3823         |
| <b>PEAK HR FACTOR :</b> | 0.886               | 0.862  | 0.688  | 0.000 | 0.816        | 0.858  | 0.785  | 0.000 | 0.828        | 0.883  | 0.854 | 0.536 | 0.782        | 0.903  | 0.722 | 0.550 | 0.907        |
|                         | 0.831               |        |        |       | 0.901        |        |        |       | 0.887        |        |       |       | 0.907        |        |       |       |              |
| PM                      | 2                   | 2      | 1      | 0     | 2            | 2      | 1      | 0     | 2            | 3      | 1     | 0     | 2            | 3      | 1     | 0     |              |
|                         | NL                  | NT     | NR     | NU    | SL           | ST     | SR     | SU    | EL           | ET     | ER    | EU    | WL           | WT     | WR    | WU    |              |
| 4:00 PM                 | 18                  | 38     | 27     | 0     | 51           | 46     | 39     | 0     | 40           | 332    | 22    | 7     | 25           | 262    | 23    | 3     | 933          |
| 4:15 PM                 | 15                  | 43     | 22     | 0     | 48           | 31     | 27     | 0     | 48           | 370    | 29    | 3     | 21           | 267    | 34    | 2     | 960          |
| 4:30 PM                 | 22                  | 61     | 22     | 0     | 48           | 41     | 20     | 0     | 58           | 404    | 45    | 5     | 32           | 341    | 42    | 3     | 1144         |
| 4:45 PM                 | 21                  | 40     | 31     | 0     | 37           | 42     | 43     | 0     | 34           | 378    | 23    | 7     | 30           | 251    | 24    | 5     | 966          |
| 5:00 PM                 | 28                  | 57     | 39     | 0     | 58           | 59     | 28     | 0     | 50           | 404    | 45    | 6     | 30           | 279    | 24    | 4     | 1111         |
| 5:15 PM                 | 29                  | 62     | 25     | 0     | 47           | 42     | 27     | 0     | 43           | 404    | 17    | 7     | 46           | 298    | 25    | 3     | 1075         |
| 5:30 PM                 | 22                  | 45     | 35     | 0     | 51           | 50     | 22     | 0     | 50           | 365    | 24    | 7     | 30           | 269    | 36    | 4     | 1010         |
| 5:45 PM                 | 13                  | 39     | 26     | 0     | 25           | 27     | 19     | 0     | 42           | 365    | 23    | 2     | 27           | 279    | 26    | 2     | 915          |
| <b>TOTAL VOLUMES :</b>  | 168                 | 385    | 227    | 0     | 365          | 338    | 225    | 0     | 365          | 3022   | 228   | 44    | 241          | 2246   | 234   | 26    | 8114         |
| <b>APPROACH %'s :</b>   | 21.54%              | 49.36% | 29.10% | 0.00% | 39.33%       | 36.42% | 24.25% | 0.00% | 9.98%        | 82.59% | 6.23% | 1.20% | 8.77%        | 81.76% | 8.52% | 0.95% |              |
| <b>PEAK HR :</b>        | 04:30 PM - 05:30 PM |        |        |       |              |        |        |       |              |        |       |       |              |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 100                 | 220    | 117    | 0     | 190          | 184    | 118    | 0     | 185          | 1590   | 130   | 25    | 138          | 1169   | 115   | 15    | 4296         |
| <b>PEAK HR FACTOR :</b> | 0.862               | 0.887  | 0.750  | 0.000 | 0.819        | 0.780  | 0.686  | 0.000 | 0.797        | 0.984  | 0.722 | 0.893 | 0.750        | 0.857  | 0.685 | 0.750 | 0.939        |
|                         | 0.881               |        |        |       | 0.848        |        |        |       | 0.942        |        |       |       | 0.859        |        |       |       |              |

# Valencia Ave & Imperial Hwy

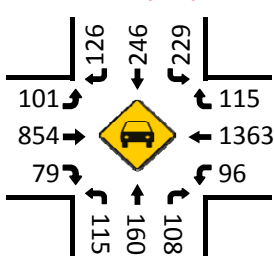
## Peak Hour Turning Movement Count

ID: 18-01231-022  
City: Brea

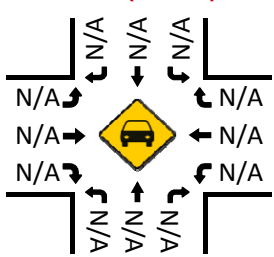
Day: Tuesday  
Date: 11/13/2018



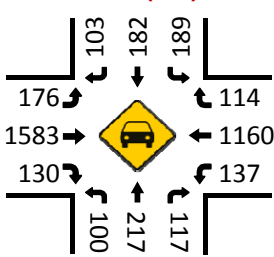
Cars (AM)



Cars (NOON)



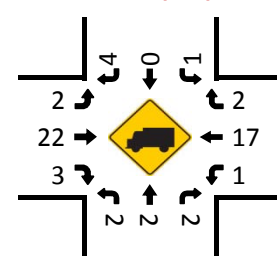
Cars (PM)



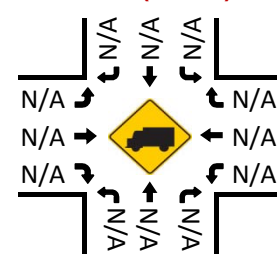
Valencia Ave NORTHBOUND

| Valencia Ave NORTHBOUND | Imperial Hwy |      |     |     |      |    |
|-------------------------|--------------|------|-----|-----|------|----|
|                         | PM           | NOON | AM  | PM  | NOON | AM |
| 452                     | 0            | 100  | 220 | 117 | 0    | 0  |
| 0                       | 0            | 0    | 0   | 0   | 0    | 0  |
| 426                     | 0            | 117  | 162 | 110 | 0    | 0  |

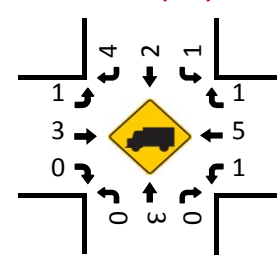
2axle (AM)



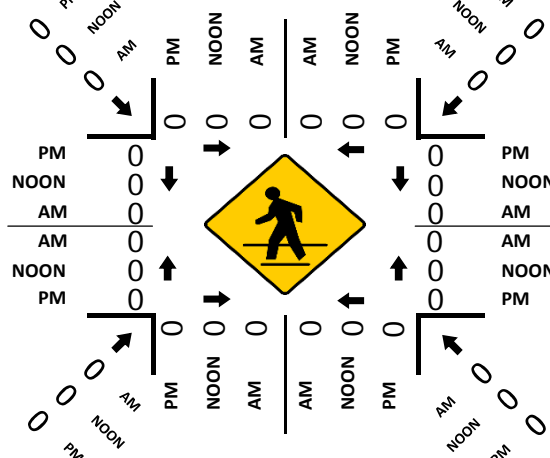
2axle (NOON)



2axle (PM)



Pedestrians (Crosswalks)



# National Data & Surveying Services Intersection Turning Movement Count

Location: Rose Dr & Imperial Hwy  
 City: Brea  
 Control: Signalized

Project ID: 18-01058-004  
 Date: 3/27/2018

## Total

| NS/EW Streets:          | Rose Dr             |        |        |       | Rose Dr    |        |       |       | Imperial Hwy |        |        |       | Imperial Hwy |        |        |       | TOTAL        |
|-------------------------|---------------------|--------|--------|-------|------------|--------|-------|-------|--------------|--------|--------|-------|--------------|--------|--------|-------|--------------|
|                         | NORTHBOUND          |        |        |       | SOUTHBOUND |        |       |       | EASTBOUND    |        |        |       | WESTBOUND    |        |        |       |              |
| AM                      | NL                  | NT     | NR     | NU    | SL         | ST     | SR    | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    | TOTAL        |
| 7:00 AM                 | 31                  | 38     | 16     | 0     | 158        | 112    | 4     | 0     | 7            | 254    | 45     | 0     | 26           | 214    | 95     | 2     | 1002         |
| 7:15 AM                 | 43                  | 33     | 22     | 0     | 208        | 131    | 7     | 0     | 5            | 237    | 48     | 0     | 28           | 242    | 106    | 0     | 1110         |
| 7:30 AM                 | 53                  | 44     | 36     | 0     | 192        | 104    | 5     | 0     | 9            | 269    | 50     | 0     | 92           | 314    | 126    | 1     | 1295         |
| 7:45 AM                 | 65                  | 58     | 40     | 0     | 204        | 110    | 5     | 0     | 4            | 301    | 52     | 0     | 58           | 316    | 116    | 1     | 1330         |
| 8:00 AM                 | 47                  | 36     | 26     | 0     | 192        | 105    | 5     | 0     | 9            | 264    | 56     | 2     | 42           | 337    | 132    | 2     | 1255         |
| 8:15 AM                 | 62                  | 38     | 27     | 0     | 164        | 112    | 4     | 0     | 6            | 240    | 54     | 2     | 42           | 290    | 112    | 1     | 1154         |
| 8:30 AM                 | 41                  | 38     | 23     | 0     | 160        | 80     | 8     | 0     | 3            | 231    | 36     | 0     | 28           | 273    | 120    | 1     | 1042         |
| 8:45 AM                 | 50                  | 46     | 23     | 0     | 163        | 91     | 6     | 0     | 10           | 185    | 49     | 2     | 46           | 272    | 100    | 3     | 1046         |
| <b>TOTAL VOLUMES :</b>  | 392                 | 331    | 213    | 0     | 1441       | 845    | 44    | 0     | 53           | 1981   | 390    | 6     | 362          | 2258   | 907    | 11    | 9234         |
| <b>APPROACH %'s :</b>   | 41.88%              | 35.36% | 22.76% | 0.00% | 61.85%     | 36.27% | 1.89% | 0.00% | 2.18%        | 81.52% | 16.05% | 0.25% | 10.23%       | 63.82% | 25.64% | 0.31% |              |
| <b>PEAK HR :</b>        | 07:30 AM - 08:30 AM |        |        |       |            |        |       |       |              |        |        |       |              |        |        |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 227                 | 176    | 129    | 0     | 752        | 431    | 19    | 0     | 28           | 1074   | 212    | 4     | 234          | 1257   | 486    | 5     | 5034         |
| <b>PEAK HR FACTOR :</b> | 0.873               | 0.759  | 0.806  | 0.000 | 0.922      | 0.962  | 0.950 | 0.000 | 0.778        | 0.892  | 0.946  | 0.500 | 0.636        | 0.932  | 0.920  | 0.625 | 0.946        |
|                         |                     |        | 0.816  |       |            |        | 0.942 |       |              |        | 0.923  |       |              |        | 0.930  |       |              |
| PM                      | NL                  | NT     | NR     | NU    | SL         | ST     | SR    | SU    | EL           | ET     | ER     | EU    | WL           | WT     | WR     | WU    | TOTAL        |
| 4:00 PM                 | 54                  | 84     | 28     | 0     | 165        | 64     | 3     | 0     | 17           | 273    | 61     | 2     | 54           | 247    | 201    | 3     | 1256         |
| 4:15 PM                 | 63                  | 92     | 31     | 0     | 219        | 74     | 6     | 0     | 10           | 312    | 48     | 1     | 28           | 270    | 173    | 3     | 1330         |
| 4:30 PM                 | 72                  | 101    | 25     | 0     | 162        | 90     | 6     | 0     | 11           | 303    | 49     | 5     | 41           | 256    | 172    | 2     | 1295         |
| 4:45 PM                 | 54                  | 120    | 24     | 0     | 183        | 90     | 7     | 0     | 9            | 362    | 79     | 3     | 30           | 316    | 188    | 3     | 1468         |
| 5:00 PM                 | 61                  | 124    | 30     | 0     | 218        | 106    | 3     | 0     | 6            | 396    | 59     | 3     | 23           | 301    | 175    | 3     | 1508         |
| 5:15 PM                 | 55                  | 104    | 27     | 0     | 209        | 107    | 5     | 0     | 14           | 437    | 55     | 2     | 38           | 305    | 173    | 4     | 1535         |
| 5:30 PM                 | 61                  | 106    | 29     | 0     | 208        | 92     | 2     | 0     | 22           | 346    | 62     | 3     | 41           | 260    | 154    | 1     | 1387         |
| 5:45 PM                 | 64                  | 94     | 21     | 0     | 217        | 69     | 3     | 0     | 9            | 380    | 52     | 1     | 35           | 225    | 133    | 6     | 1309         |
| <b>TOTAL VOLUMES :</b>  | 484                 | 825    | 215    | 0     | 1581       | 692    | 35    | 0     | 98           | 2809   | 465    | 20    | 290          | 2180   | 1369   | 25    | 11088        |
| <b>APPROACH %'s :</b>   | 31.76%              | 54.13% | 14.11% | 0.00% | 68.50%     | 29.98% | 1.52% | 0.00% | 2.89%        | 82.81% | 13.71% | 0.59% | 7.51%        | 56.42% | 35.43% | 0.65% |              |
| <b>PEAK HR :</b>        | 04:45 PM - 05:45 PM |        |        |       |            |        |       |       |              |        |        |       |              |        |        |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 231                 | 454    | 110    | 0     | 818        | 395    | 17    | 0     | 51           | 1541   | 255    | 11    | 132          | 1182   | 690    | 11    | 5898         |
| <b>PEAK HR FACTOR :</b> | 0.947               | 0.915  | 0.917  | 0.000 | 0.938      | 0.923  | 0.607 | 0.000 | 0.580        | 0.882  | 0.807  | 0.917 | 0.805        | 0.935  | 0.918  | 0.688 | 0.961        |
|                         |                     |        | 0.924  |       |            |        | 0.940 |       |              |        | 0.914  |       |              |        | 0.938  |       |              |

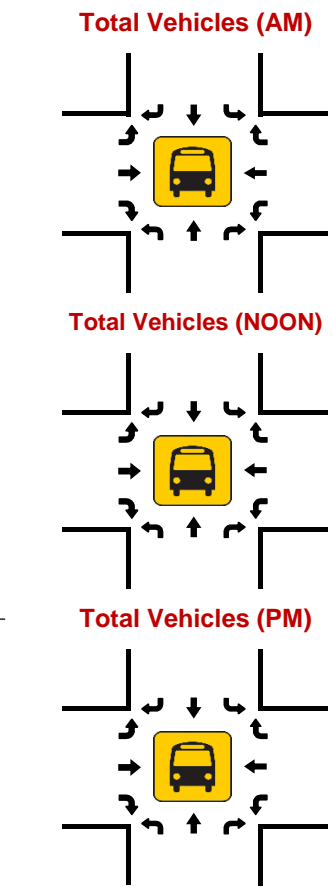
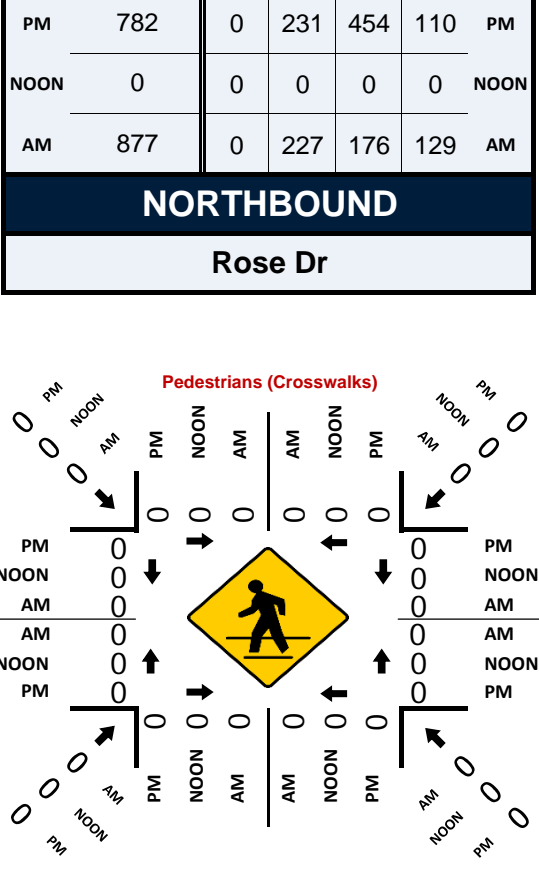
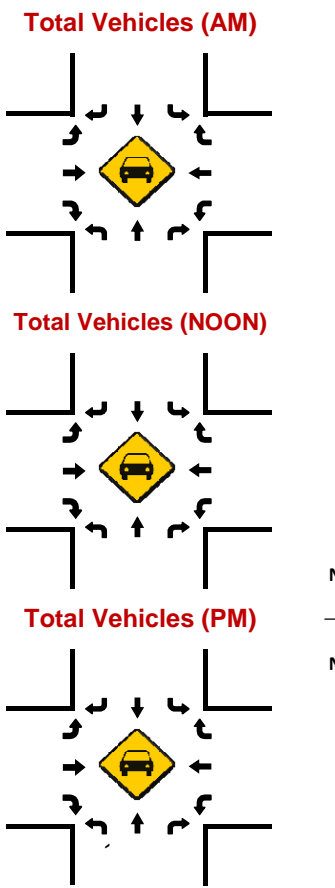
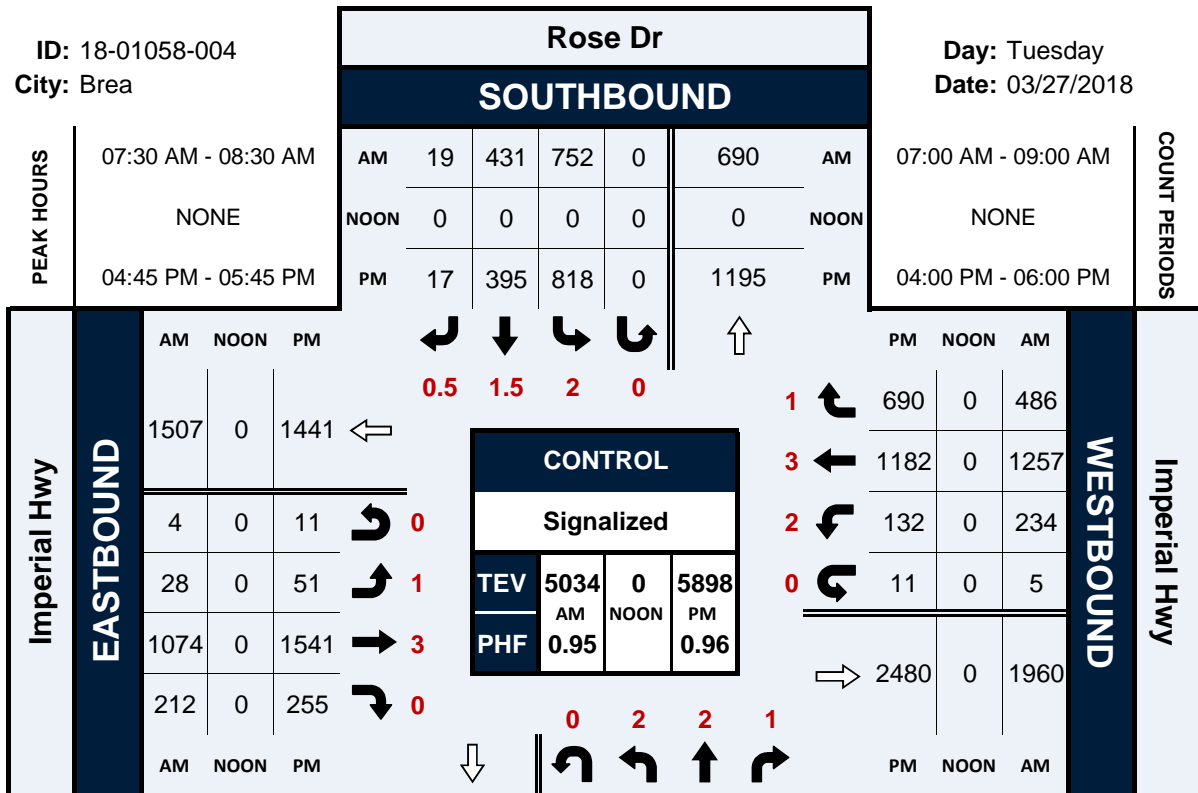


# Rose Dr & Imperial Hwy

## Peak Hour Turning Movement Count

ID: 18-01058-004  
City: Brea

Day: Tuesday  
Date: 03/27/2018



City :Brea  
 N-S Direction :Redbay Ave  
 E-W Direction: Birch St

File Name : H2112007  
 Site Code : 00000000  
 Start Date : 12/8/2021  
 Page No : 1

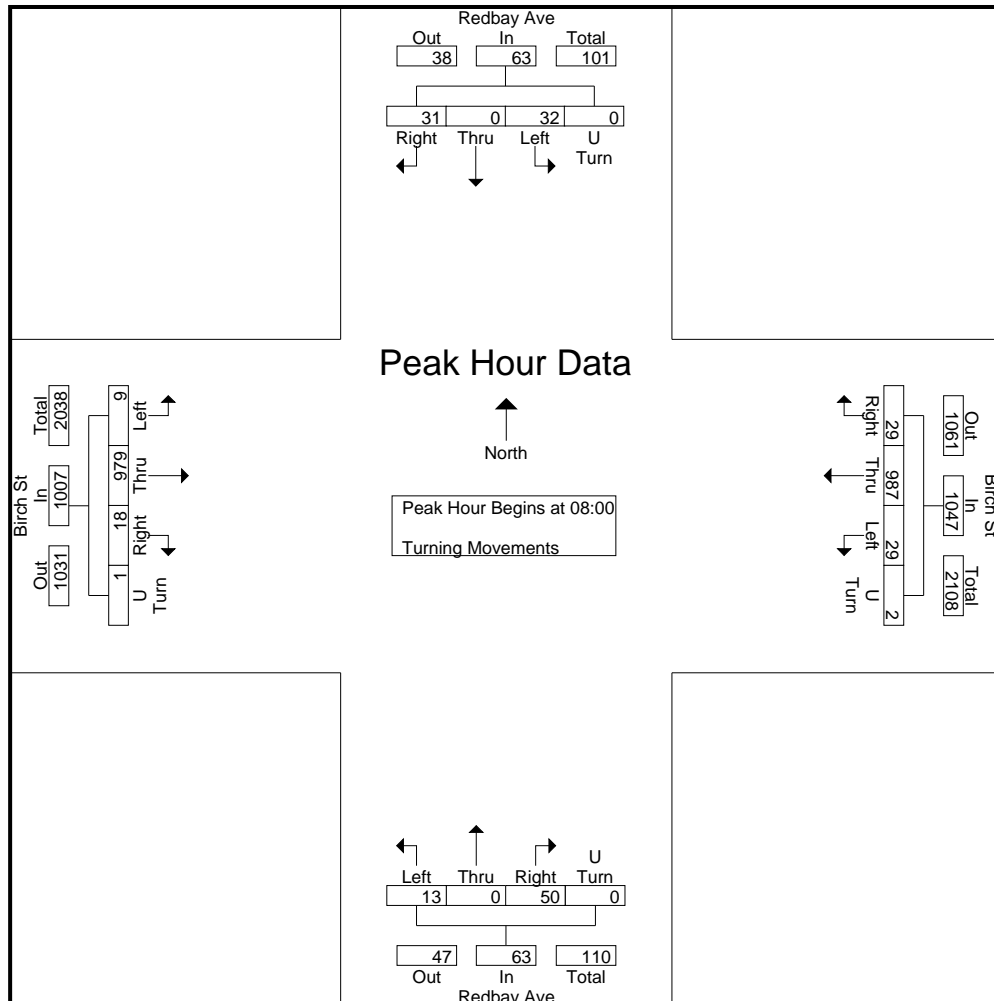
Groups Printed- Turning Movements

| Start Time  | Redbay Ave Southbound |      |      |        | Birch St Westbound |      |      |        | Redbay Ave Northbound |      |      |        | Birch St Eastbound |      |      |        | Int. Total |
|-------------|-----------------------|------|------|--------|--------------------|------|------|--------|-----------------------|------|------|--------|--------------------|------|------|--------|------------|
|             | Right                 | Thru | Left | U Turn | Right              | Thru | Left | U Turn | Right                 | Thru | Left | U Turn | Right              | Thru | Left | U Turn |            |
| 07:00       | 11                    | 0    | 9    | 0      | 2                  | 88   | 3    | 0      | 2                     | 0    | 4    | 0      | 0                  | 110  | 1    | 0      | 230        |
| 07:15       | 5                     | 0    | 4    | 0      | 1                  | 126  | 0    | 0      | 3                     | 0    | 1    | 0      | 2                  | 143  | 1    | 0      | 286        |
| 07:30       | 12                    | 0    | 2    | 0      | 3                  | 141  | 2    | 0      | 0                     | 0    | 7    | 0      | 0                  | 176  | 1    | 0      | 344        |
| 07:45       | 10                    | 0    | 2    | 0      | 4                  | 219  | 1    | 0      | 3                     | 0    | 9    | 0      | 0                  | 200  | 3    | 0      | 451        |
| Total       | 38                    | 0    | 17   | 0      | 10                 | 574  | 6    | 0      | 8                     | 0    | 21   | 0      | 2                  | 629  | 6    | 0      | 1311       |
| 08:00       | 13                    | 0    | 6    | 0      | 4                  | 243  | 4    | 1      | 11                    | 0    | 2    | 0      | 5                  | 273  | 2    | 0      | 564        |
| 08:15       | 6                     | 0    | 8    | 0      | 3                  | 296  | 9    | 1      | 18                    | 0    | 6    | 0      | 2                  | 221  | 3    | 1      | 574        |
| 08:30       | 6                     | 0    | 11   | 0      | 13                 | 204  | 11   | 0      | 8                     | 0    | 2    | 0      | 7                  | 219  | 2    | 0      | 483        |
| 08:45       | 6                     | 0    | 7    | 0      | 9                  | 244  | 5    | 0      | 13                    | 0    | 3    | 0      | 4                  | 266  | 2    | 0      | 559        |
| Total       | 31                    | 0    | 32   | 0      | 29                 | 987  | 29   | 2      | 50                    | 0    | 13   | 0      | 18                 | 979  | 9    | 1      | 2180       |
| 16:00       | 7                     | 0    | 2    | 0      | 5                  | 253  | 8    | 1      | 6                     | 0    | 2    | 0      | 11                 | 301  | 10   | 0      | 606        |
| 16:15       | 7                     | 0    | 4    | 0      | 12                 | 325  | 3    | 1      | 10                    | 0    | 4    | 0      | 6                  | 308  | 1    | 0      | 681        |
| 16:30       | 3                     | 0    | 3    | 0      | 11                 | 288  | 5    | 0      | 7                     | 0    | 3    | 0      | 7                  | 292  | 12   | 0      | 631        |
| 16:45       | 7                     | 0    | 5    | 0      | 9                  | 329  | 2    | 1      | 6                     | 0    | 3    | 0      | 4                  | 321  | 11   | 0      | 698        |
| Total       | 24                    | 0    | 14   | 0      | 37                 | 1195 | 18   | 3      | 29                    | 0    | 12   | 0      | 28                 | 1222 | 34   | 0      | 2616       |
| 17:00       | 13                    | 0    | 1    | 0      | 6                  | 363  | 3    | 2      | 5                     | 0    | 8    | 0      | 11                 | 305  | 9    | 0      | 726        |
| 17:15       | 4                     | 0    | 4    | 0      | 10                 | 343  | 2    | 0      | 9                     | 0    | 7    | 0      | 10                 | 335  | 12   | 1      | 737        |
| 17:30       | 8                     | 0    | 5    | 0      | 13                 | 335  | 4    | 0      | 7                     | 0    | 2    | 0      | 13                 | 329  | 13   | 0      | 729        |
| 17:45       | 6                     | 0    | 3    | 0      | 12                 | 305  | 7    | 1      | 8                     | 0    | 6    | 0      | 9                  | 306  | 12   | 0      | 675        |
| Total       | 31                    | 0    | 13   | 0      | 41                 | 1346 | 16   | 3      | 29                    | 0    | 23   | 0      | 43                 | 1275 | 46   | 1      | 2867       |
| Grand Total | 124                   | 0    | 76   | 0      | 117                | 4102 | 69   | 8      | 116                   | 0    | 69   | 0      | 91                 | 4105 | 95   | 2      | 8974       |
| Apprch %    | 62                    | 0    | 38   | 0      | 2.7                | 95.5 | 1.6  | 0.2    | 62.7                  | 0    | 37.3 | 0      | 2.1                | 95.6 | 2.2  | 0      |            |
| Total %     | 1.4                   | 0    | 0.8  | 0      | 1.3                | 45.7 | 0.8  | 0.1    | 1.3                   | 0    | 0.8  | 0      | 1                  | 45.7 | 1.1  | 0      |            |

City :Brea  
 N-S Direction :Redbay Ave  
 E-W Direction: Birch St

File Name : H2112007  
 Site Code : 00000000  
 Start Date : 12/8/2021  
 Page No : 2

| Start Time   | Redbay Ave Southbound |          |          |          |            | Birch St Westbound |            |          |          |            | Redbay Ave Northbound |          |          |          |            | Birch St Eastbound |            |          |          |            | Int. Total |
|--|-----------------------|----------|----------|----------|------------|--------------------|------------|----------|----------|------------|-----------------------|----------|----------|----------|------------|--------------------|------------|----------|----------|------------|------------|
|  | Right                 | Thru     | Left     | U Turn   | App. Total | Right              | Thru       | Left     | U Turn   | App. Total | Right                 | Thru     | Left     | U Turn   | App. Total | Right              | Thru       | Left     | U Turn   | App. Total |            |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 |                       |          |          |          |            |                    |            |          |          |            |                       |          |          |          |            |                    |            |          |          |            |            |
| Peak Hour for Entire Intersection Begins at 08:00    |                       |          |          |          |            |                    |            |          |          |            |                       |          |          |          |            |                    |            |          |          |            |            |
| 08:00  | 13                    | 0        | 8        | 0        | 19         | 4                  | 243        | 4        | 1        | 252        | 18                    | 0        | 6        | 0        | 24         | 2                  | 221        | 3        | 1        | 230        | 564        |
| 08:15  | 6                     | 0        | 8        | 0        | 14         | 3                  | 296        | 9        | 1        | 309        | 18                    | 0        | 6        | 0        | 24         | 2                  | 221        | 3        | 1        | 230        | 574        |
| 08:30  | 6                     | 0        | 11       | 0        | 17         | 13                 | 11         | 11       | 0        | 25         | 7                     | 0        | 0        | 0        | 7          | 7                  | 0          | 0        | 0        | 7          | 574        |
| <b>08:45</b>   | <b>6</b>              | <b>0</b> | <b>7</b> | <b>0</b> | <b>13</b>  | <b>9</b>           | <b>244</b> | <b>5</b> | <b>0</b> | <b>258</b> | <b>13</b>             | <b>0</b> | <b>3</b> | <b>0</b> | <b>16</b>  | <b>4</b>           | <b>266</b> | <b>2</b> | <b>0</b> | <b>272</b> | <b>559</b> |
| Total Volume   | 31                    | 0        | 32       | 0        | 63         | 29                 | 987        | 29       | 2        | 1047       | 50                    | 0        | 13       | 0        | 63         | 18                 | 979        | 9        | 1        | 1007       | 2180       |
| % App. Total   | 49.2                  | 0        | 50.8     | 0        |            | 2.8                | 94.3       | 2.8      | 0.2      |            | 79.4                  | 0        | 20.6     | 0        |            | 1.8                | 97.2       | 0.9      | 0.1      |            |            |
| PHF  | .596                  | .000     | .727     | .000     | .829       | .558               | .834       | .659     | .500     | .847       | .694                  | .000     | .542     | .000     | .656       | .643               | .897       | .750     | .250     | .899       | .949       |

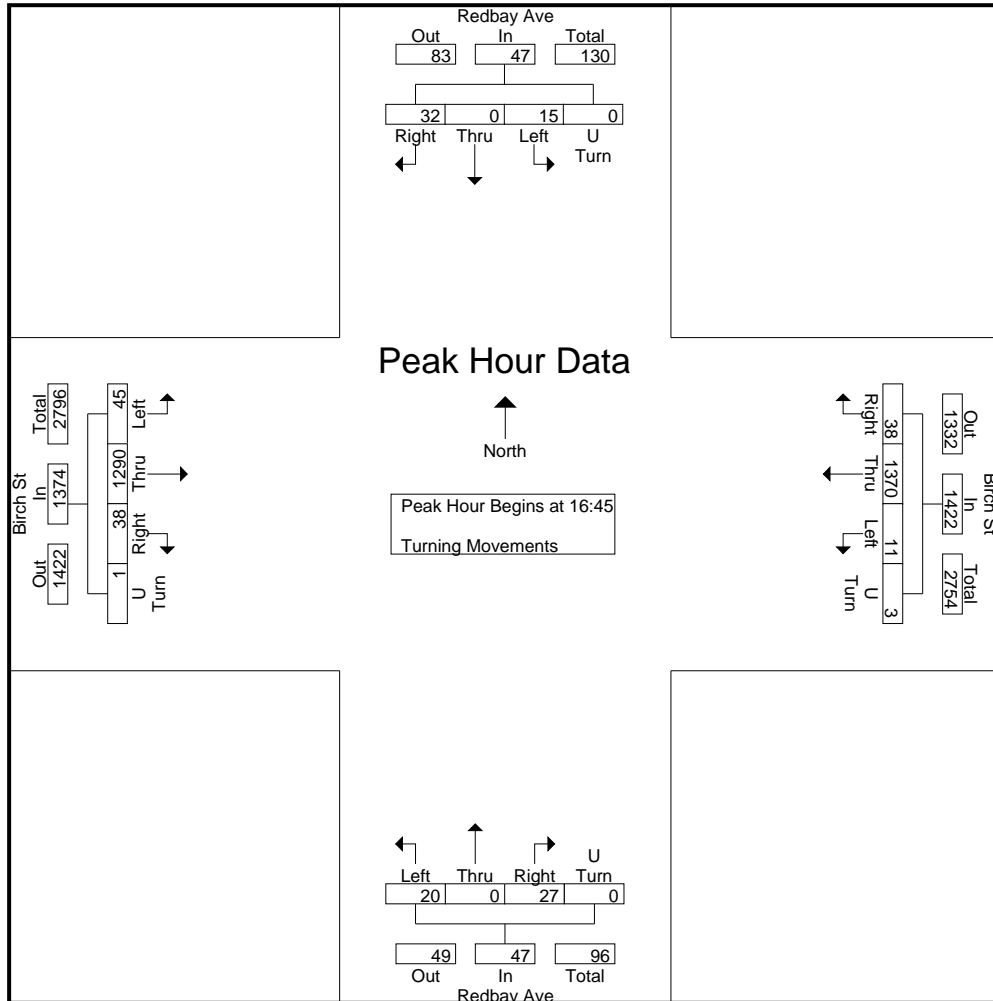


City :Brea  
 N-S Direction :Redbay Ave  
 E-W Direction: Birch St

File Name : H2112007  
 Site Code : 0000000  
 Start Date : 12/8/2021  
 Page No : 3

| Start Time   | Redbay Ave Southbound |      |      |        |            | Birch St Westbound |      |      |        |            | Redbay Ave Northbound |      |      |        |            | Birch St Eastbound |      |      |        |            | Int. Total |  |
|--------------|-----------------------|------|------|--------|------------|--------------------|------|------|--------|------------|-----------------------|------|------|--------|------------|--------------------|------|------|--------|------------|------------|--|
|              | Right                 | Thru | Left | U Turn | App. Total | Right              | Thru | Left | U Turn | App. Total | Right                 | Thru | Left | U Turn | App. Total | Right              | Thru | Left | U Turn | App. Total |            |  |
| 16:45        | 7                     | 0    | 5    |        |            |                    |      |      |        |            |                       |      |      |        |            |                    |      |      |        |            |            |  |
| 17:00        | 13                    | 0    | 1    | 0      | 14         | 6                  | 363  | 3    | 2      | 374        | 5                     | 0    | 8    | 0      | 13         | 11                 | 305  | 9    | 0      | 325        | 726        |  |
| 17:15        | 4                     | 0    | 4    | 0      | 8          | 10                 | 343  | 2    | 0      | 355        | 9                     | 0    | 7    | 0      | 16         | 10                 | 335  | 12   | 1      | 358        | 737        |  |
| 17:30        | 8                     | 0    | 5    | 0      | 13         | 13                 |      | 4    |        |            |                       |      |      |        |            | 13                 |      | 13   |        |            |            |  |
| Total Volume | 32                    | 0    | 15   | 0      | 47         | 38                 | 1370 | 11   | 3      | 1422       | 27                    | 0    | 20   | 0      | 47         | 38                 | 1290 | 45   | 1      | 1374       | 2890       |  |
| % App. Total | 68.1                  | 0    | 31.9 | 0      |            | 2.7                | 96.3 | 0.8  | 0.2    |            | 57.4                  | 0    | 42.6 | 0      |            | 2.8                | 93.9 | 3.3  | 0.1    |            |            |  |
| PHF          | .615                  | .000 | .750 | .000   | .839       | .731               | .944 | .688 | .375   | .951       | .750                  | .000 | .625 | .000   | .734       | .731               | .963 | .865 | .250   | .959       | .980       |  |

Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 16:45



City :Brea  
 N-S Direction :Voyager Ave  
 E-W Direction: Birch St

File Name : H2112008  
 Site Code : 00000000  
 Start Date : 12/8/2021  
 Page No : 1

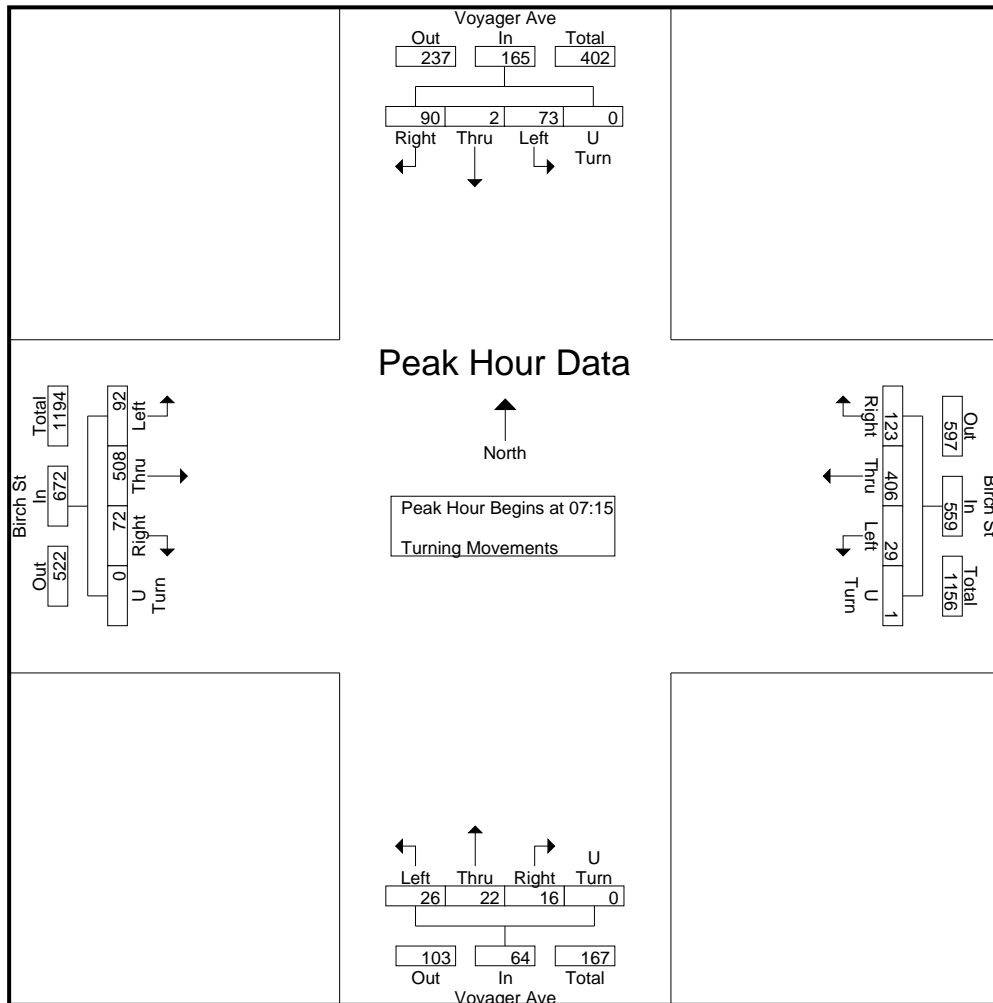
Groups Printed- Turning Movements

| Start Time  | Voyager Ave Southbound |      |      |        | Birch St Westbound |      |      |        | Voyager Ave Northbound |      |      |        | Birch St Eastbound |      |      |        | Int. Total |
|-------------|------------------------|------|------|--------|--------------------|------|------|--------|------------------------|------|------|--------|--------------------|------|------|--------|------------|
|             | Right                  | Thru | Left | U Turn | Right              | Thru | Left | U Turn | Right                  | Thru | Left | U Turn | Right              | Thru | Left | U Turn |            |
| 07:00       | 3                      | 0    | 1    | 0      | 9                  | 73   | 3    | 0      | 3                      | 0    | 4    | 0      | 13                 | 62   | 7    | 0      | 178        |
| 07:15       | 5                      | 0    | 2    | 0      | 11                 | 85   | 6    | 0      | 2                      | 0    | 3    | 0      | 8                  | 97   | 14   | 0      | 233        |
| 07:30       | 29                     | 0    | 18   | 0      | 51                 | 78   | 8    | 0      | 4                      | 0    | 10   | 0      | 28                 | 137  | 34   | 0      | 397        |
| 07:45       | 50                     | 2    | 47   | 0      | 55                 | 122  | 10   | 1      | 3                      | 22   | 3    | 0      | 22                 | 162  | 37   | 0      | 536        |
| Total       | 87                     | 2    | 68   | 0      | 126                | 358  | 27   | 1      | 12                     | 22   | 20   | 0      | 71                 | 458  | 92   | 0      | 1344       |
| 08:00       | 6                      | 0    | 6    | 0      | 6                  | 121  | 5    | 0      | 7                      | 0    | 10   | 0      | 14                 | 112  | 7    | 0      | 294        |
| 08:15       | 3                      | 0    | 0    | 0      | 3                  | 106  | 4    | 0      | 5                      | 0    | 2    | 0      | 2                  | 104  | 0    | 0      | 229        |
| 08:30       | 2                      | 0    | 1    | 0      | 0                  | 100  | 2    | 0      | 2                      | 0    | 7    | 0      | 6                  | 99   | 1    | 0      | 220        |
| 08:45       | 3                      | 0    | 0    | 0      | 4                  | 86   | 3    | 0      | 1                      | 0    | 2    | 0      | 8                  | 104  | 4    | 0      | 215        |
| Total       | 14                     | 0    | 7    | 0      | 13                 | 413  | 14   | 0      | 15                     | 0    | 21   | 0      | 30                 | 419  | 12   | 0      | 958        |
| 16:00       | 4                      | 0    | 1    | 0      | 0                  | 134  | 2    | 0      | 13                     | 0    | 10   | 0      | 1                  | 181  | 1    | 0      | 347        |
| 16:15       | 6                      | 0    | 2    | 0      | 3                  | 122  | 0    | 0      | 11                     | 1    | 9    | 0      | 2                  | 211  | 4    | 1      | 372        |
| 16:30       | 4                      | 0    | 6    | 0      | 4                  | 113  | 0    | 0      | 8                      | 0    | 11   | 0      | 1                  | 183  | 4    | 0      | 334        |
| 16:45       | 2                      | 0    | 2    | 0      | 2                  | 160  | 2    | 0      | 9                      | 0    | 7    | 0      | 4                  | 193  | 6    | 0      | 387        |
| Total       | 16                     | 0    | 11   | 0      | 9                  | 529  | 4    | 0      | 41                     | 1    | 37   | 0      | 8                  | 768  | 15   | 1      | 1440       |
| 17:00       | 5                      | 0    | 1    | 0      | 2                  | 174  | 0    | 0      | 10                     | 0    | 19   | 0      | 3                  | 166  | 10   | 0      | 390        |
| 17:15       | 1                      | 1    | 0    | 0      | 3                  | 133  | 0    | 0      | 3                      | 0    | 2    | 0      | 0                  | 194  | 2    | 1      | 340        |
| 17:30       | 0                      | 1    | 3    | 0      | 4                  | 159  | 2    | 0      | 2                      | 0    | 2    | 0      | 3                  | 166  | 10   | 1      | 353        |
| 17:45       | 2                      | 1    | 4    | 0      | 3                  | 138  | 0    | 0      | 2                      | 0    | 3    | 0      | 2                  | 161  | 6    | 2      | 324        |
| Total       | 8                      | 3    | 8    | 0      | 12                 | 604  | 2    | 0      | 17                     | 0    | 26   | 0      | 8                  | 687  | 28   | 4      | 1407       |
| Grand Total | 125                    | 5    | 94   | 0      | 160                | 1904 | 47   | 1      | 85                     | 23   | 104  | 0      | 117                | 2332 | 147  | 5      | 5149       |
| Apprch %    | 55.8                   | 2.2  | 42   | 0      | 7.6                | 90.2 | 2.2  | 0      | 40.1                   | 10.8 | 49.1 | 0      | 4.5                | 89.7 | 5.7  | 0.2    |            |
| Total %     | 2.4                    | 0.1  | 1.8  | 0      | 3.1                | 37   | 0.9  | 0      | 1.7                    | 0.4  | 2    | 0      | 2.3                | 45.3 | 2.9  | 0.1    |            |

City :Brea  
 N-S Direction :Voyager Ave  
 E-W Direction: Birch St

File Name : H2112008  
 Site Code : 0000000  
 Start Date : 12/8/2021  
 Page No : 2

| Start Time   | Voyager Ave Southbound |          |           |          |            | Birch St Westbound |            |           |          |            | Voyager Ave Northbound |           |          |          |            | Birch St Eastbound |            |           |          |            | Int. Total |     |
|--|------------------------|----------|-----------|----------|------------|--------------------|------------|-----------|----------|------------|------------------------|-----------|----------|----------|------------|--------------------|------------|-----------|----------|------------|------------|-----|
|  | Right                  | Thru     | Left      | U Turn   | App. Total | Right              | Thru       | Left      | U Turn   | App. Total | Right                  | Thru      | Left     | U Turn   | App. Total | Right              | Thru       | Left      | U Turn   | App. Total |            |     |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 |                        |          |           |          |            |                    |            |           |          |            |                        |           |          |          |            |                    |            |           |          |            |            |     |
| Peak Hour for Entire Intersection Begins at 07:15    |                        |          |           |          |            |                    |            |           |          |            |                        |           |          |          |            |                    |            |           |          |            |            |     |
| 07:15  | 5                      | 0        | 2         | 0        | 7          | 11                 | 85         | 6         | 0        | 102        | 2                      | 0         | 3        | 0        | 5          | 8                  | 97         | 14        | 0        | 119        | 233        |     |
| 07:30  | 29                     | 0        | 18        | 0        | 47         | 51                 | 78         | 8         | 0        | 137        | 4                      | 0         | 10       | 0        | 28         | 28                 | 28         | 162       | 37       | 0          | 221        | 536 |
| <b>07:45</b>   | <b>50</b>              | <b>2</b> | <b>47</b> | <b>0</b> | <b>99</b>  | <b>55</b>          | <b>122</b> | <b>10</b> | <b>1</b> | <b>188</b> | <b>3</b>               | <b>22</b> | <b>3</b> | <b>0</b> | <b>28</b>  | <b>22</b>          | <b>162</b> | <b>37</b> | <b>0</b> | <b>221</b> | <b>536</b> |     |
| 08:00  | 6                      | 0        | 6         | 0        | 12         | 6                  | 121        | 5         | 0        | 132        | 7                      |           |          |          |            |                    |            |           |          |            |            |     |
| Total Volume   | 90                     | 2        | 73        | 0        | 165        | 123                | 406        | 29        | 1        | 559        | 16                     | 22        | 26       | 0        | 64         | 72                 | 508        | 92        | 0        | 672        | 1460       |     |
| % App. Total   | 54.5                   | 1.2      | 44.2      | 0        |            | 22                 | 72.6       | 5.2       | 0.2      |            | 25                     | 34.4      | 40.6     | 0        |            | 10.7               | 75.6       | 13.7      | 0        |            |            |     |
| PHF  | .450                   | .250     | .388      | .000     | .417       | .559               | .832       | .725      | .250     | .743       | .571                   | .250      | .650     | .000     | .571       | .643               | .784       | .622      | .000     | .760       | .681       |     |

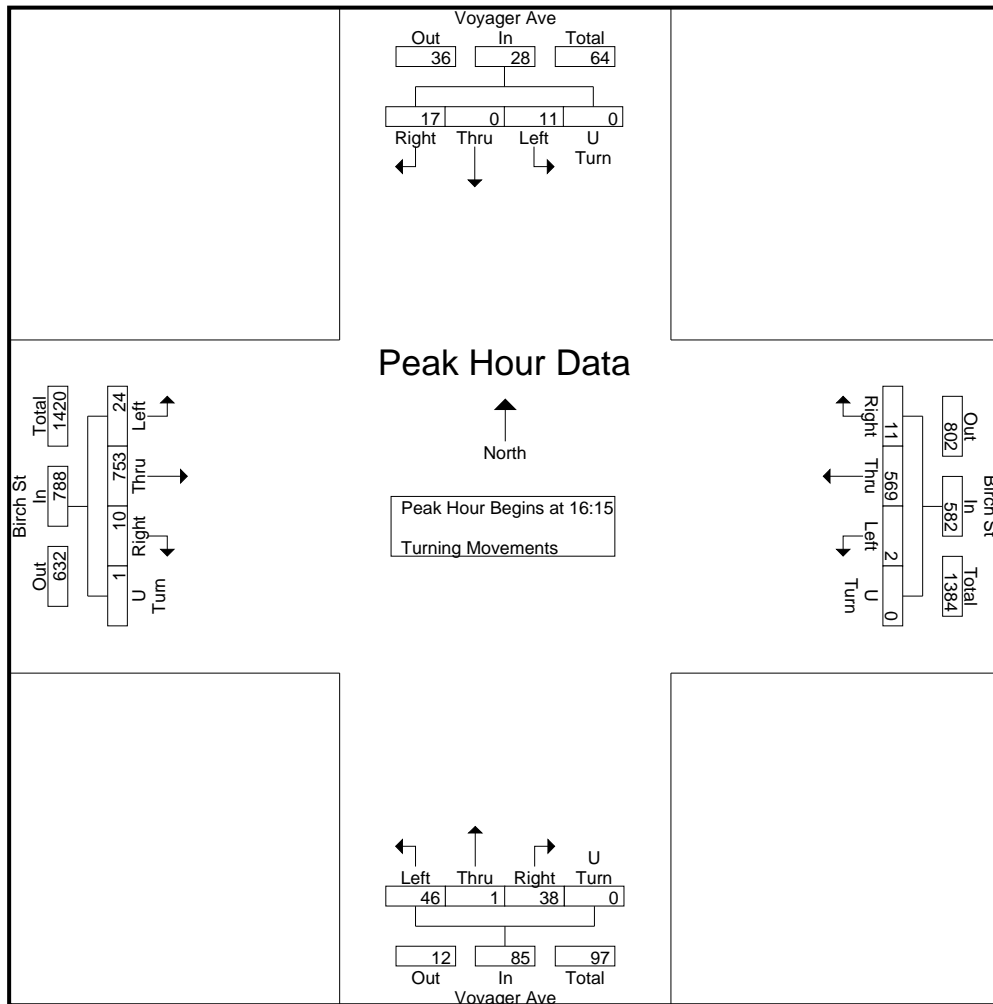


City :Brea  
 N-S Direction :Voyager Ave  
 E-W Direction: Birch St

File Name : H2112008  
 Site Code : 0000000  
 Start Date : 12/8/2021  
 Page No : 3

| Start Time   | Voyager Ave Southbound |      |      |        |            | Birch St Westbound |      |      |        |            | Voyager Ave Northbound |      |      |        |            | Birch St Eastbound |      |      |        |            | Int. Total |
|--------------|------------------------|------|------|--------|------------|--------------------|------|------|--------|------------|------------------------|------|------|--------|------------|--------------------|------|------|--------|------------|------------|
|              | Right                  | Thru | Left | U Turn | App. Total | Right              | Thru | Left | U Turn | App. Total | Right                  | Thru | Left | U Turn | App. Total | Right              | Thru | Left | U Turn | App. Total |            |
| 16:15        | 6                      |      |      |        |            |                    |      |      |        |            | 11                     | 1    | 9    | 0      | 21         | 2                  | 211  | 4    | 1      | 218        | 372        |
| 16:30        | 4                      | 0    | 6    |        | 10         | 4                  |      |      |        |            |                        |      |      |        |            |                    |      |      |        |            |            |
| 16:45        | 2                      | 0    | 2    | 0      | 4          | 2                  | 160  | 2    | 0      | 164        | 9                      | 0    | 7    | 0      | 16         | 4                  | 193  | 6    | 0      | 203        | 387        |
| 17:00        | 5                      | 0    | 1    | 0      | 6          | 2                  | 174  | 0    | 0      | 176        | 10                     | 0    | 19   | 0      | 29         | 3                  | 166  | 10   | 0      | 179        | 390        |
| Total Volume | 17                     | 0    | 11   | 0      | 28         | 11                 | 569  | 2    | 0      | 582        | 38                     | 1    | 46   | 0      | 85         | 10                 | 753  | 24   | 1      | 788        | 1483       |
| % App. Total | 60.7                   | 0    | 39.3 | 0      |            | 1.9                | 97.8 | 0.3  | 0      |            | 44.7                   | 1.2  | 54.1 | 0      |            | 1.3                | 95.6 | 3    | 0.1    |            |            |
| PHF          | .708                   | .000 | .458 | .000   | .700       | .688               | .818 | .250 | .000   | .827       | .864                   | .250 | .605 | .000   | .733       | .625               | .892 | .600 | .250   | .904       | .951       |

Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 16:15



*APPENDIX B-II*

**EXISTING ROADWAY SEGMENT TRAFFIC  
COUNT DATA**



**VOLUME**

Lambert Rd E/O N State College Blvd

Day: Thursday  
Date: 4/19/2018

City: Brea  
Project #: CA18\_1082\_004

| DAILY TOTALS   |    |    |       |       | NB           | SB             | EB     | WB     | Total  |       |              |      |      |      |
|----------------|----|----|-------|-------|--------------|----------------|--------|--------|--------|-------|--------------|------|------|------|
|                |    |    |       |       | 0            | 0              | 26,963 | 32,016 | 58,979 |       |              |      |      |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL        | PM Period      | NB     | SB     | EB     | WB    | TOTAL        |      |      |      |
| 00:00          |    |    | 84    | 56    | 140          | 12:00          |        |        | 401    | 470   | 871          |      |      |      |
| 00:15          |    |    | 34    | 40    | 74           | 12:15          |        |        | 377    | 406   | 783          |      |      |      |
| 00:30          |    |    | 43    | 41    | 84           | 12:30          |        |        | 389    | 451   | 840          |      |      |      |
| 00:45          |    |    | 31    | 192   | 39           | 176            | 12:45  |        | 418    | 1585  | 448          | 1775 | 866  | 3360 |
| 01:00          |    |    | 38    | 31    | 69           | 13:00          |        |        | 393    | 442   | 835          |      |      |      |
| 01:15          |    |    | 20    | 22    | 42           | 13:15          |        |        | 506    | 479   | 985          |      |      |      |
| 01:30          |    |    | 20    | 41    | 61           | 13:30          |        |        | 528    | 466   | 994          |      |      |      |
| 01:45          |    |    | 21    | 99    | 26           | 120            | 13:45  |        | 462    | 1889  | 535          | 1922 | 997  | 3811 |
| 02:00          |    |    | 35    | 27    | 62           | 14:00          |        |        | 503    | 460   | 963          |      |      |      |
| 02:15          |    |    | 9     | 29    | 38           | 14:15          |        |        | 451    | 479   | 930          |      |      |      |
| 02:30          |    |    | 30    | 43    | 73           | 14:30          |        |        | 522    | 508   | 1030         |      |      |      |
| 02:45          |    |    | 36    | 110   | 38           | 137            | 14:45  |        | 480    | 1956  | 581          | 2028 | 1061 | 3984 |
| 03:00          |    |    | 32    | 46    | 78           | 15:00          |        |        | 537    | 504   | 1041         |      |      |      |
| 03:15          |    |    | 36    | 62    | 98           | 15:15          |        |        | 458    | 552   | 1010         |      |      |      |
| 03:30          |    |    | 32    | 119   | 151          | 15:30          |        |        | 501    | 529   | 1030         |      |      |      |
| 03:45          |    |    | 29    | 129   | 119          | 346            | 15:45  |        | 465    | 1961  | 597          | 2182 | 1062 | 4143 |
| 04:00          |    |    | 42    | 62    | 104          | 16:00          |        |        | 418    | 587   | 1005         |      |      |      |
| 04:15          |    |    | 67    | 92    | 159          | 16:15          |        |        | 391    | 626   | 1017         |      |      |      |
| 04:30          |    |    | 117   | 181   | 298          | 16:30          |        |        | 488    | 615   | 1103         |      |      |      |
| 04:45          |    |    | 112   | 338   | 259          | 594            | 16:45  |        | 501    | 1798  | 661          | 2489 | 1162 | 4287 |
| 05:00          |    |    | 117   | 142   | 259          | 17:00          |        |        | 521    | 571   | 1092         |      |      |      |
| 05:15          |    |    | 216   | 187   | 403          | 17:15          |        |        | 518    | 620   | 1138         |      |      |      |
| 05:30          |    |    | 209   | 230   | 439          | 17:30          |        |        | 478    | 575   | 1053         |      |      |      |
| 05:45          |    |    | 275   | 817   | 295          | 854            | 17:45  |        | 455    | 1972  | 607          | 2373 | 1062 | 4345 |
| 06:00          |    |    | 263   | 269   | 532          | 18:00          |        |        | 497    | 528   | 1025         |      |      |      |
| 06:15          |    |    | 338   | 312   | 650          | 18:15          |        |        | 468    | 547   | 1015         |      |      |      |
| 06:30          |    |    | 401   | 383   | 784          | 18:30          |        |        | 479    | 496   | 975          |      |      |      |
| 06:45          |    |    | 425   | 1427  | 550          | 1514           | 18:45  |        | 375    | 1819  | 477          | 2048 | 852  | 3867 |
| 07:00          |    |    | 342   | 526   | 868          | 19:00          |        |        | 370    | 427   | 797          |      |      |      |
| 07:15          |    |    | 371   | 550   | 921          | 19:15          |        |        | 365    | 376   | 741          |      |      |      |
| 07:30          |    |    | 469   | 554   | 1023         | 19:30          |        |        | 299    | 346   | 645          |      |      |      |
| 07:45          |    |    | 485   | 1667  | 659          | 2289           | 19:45  |        | 233    | 1267  | 332          | 1481 | 565  | 2748 |
| 08:00          |    |    | 455   | 565   | 1020         | 20:00          |        |        | 192    | 269   | 461          |      |      |      |
| 08:15          |    |    | 389   | 482   | 871          | 20:15          |        |        | 229    | 279   | 508          |      |      |      |
| 08:30          |    |    | 322   | 493   | 815          | 20:30          |        |        | 162    | 236   | 398          |      |      |      |
| 08:45          |    |    | 395   | 1561  | 487          | 2027           | 20:45  |        | 198    | 781   | 225          | 1009 | 423  | 1790 |
| 09:00          |    |    | 381   | 441   | 822          | 21:00          |        |        | 231    | 223   | 454          |      |      |      |
| 09:15          |    |    | 305   | 469   | 774          | 21:15          |        |        | 216    | 245   | 461          |      |      |      |
| 09:30          |    |    | 365   | 462   | 827          | 21:30          |        |        | 187    | 181   | 368          |      |      |      |
| 09:45          |    |    | 336   | 1387  | 411          | 1783           | 21:45  |        | 144    | 778   | 180          | 829  | 324  | 1607 |
| 10:00          |    |    | 299   | 404   | 703          | 22:00          |        |        | 151    | 176   | 327          |      |      |      |
| 10:15          |    |    | 395   | 409   | 804          | 22:15          |        |        | 121    | 148   | 269          |      |      |      |
| 10:30          |    |    | 348   | 370   | 718          | 22:30          |        |        | 113    | 133   | 246          |      |      |      |
| 10:45          |    |    | 322   | 1364  | 367          | 1550           | 22:45  |        | 78     | 463   | 122          | 579  | 200  | 1042 |
| 11:00          |    |    | 311   | 365   | 676          | 23:00          |        |        | 89     | 94    | 183          |      |      |      |
| 11:15          |    |    | 292   | 423   | 715          | 23:15          |        |        | 45     | 64    | 109          |      |      |      |
| 11:30          |    |    | 388   | 436   | 824          | 23:30          |        |        | 66     | 78    | 144          |      |      |      |
| 11:45          |    |    | 358   | 1349  | 393          | 1617           | 23:45  |        | 54     | 254   | 58           | 294  | 112  | 548  |
| <b>TOTALS</b>  |    |    | 10440 | 13007 | 23447        | <b>TOTALS</b>  |        |        | 16523  | 19009 | <b>35532</b> |      |      |      |
| <b>SPLIT %</b> |    |    | 44.5% | 55.5% | <b>39.8%</b> | <b>SPLIT %</b> |        |        | 46.5%  | 53.5% | <b>60.2%</b> |      |      |      |

| DAILY TOTALS |  |  |  |  | NB | SB | EB     | WB     | Total  |
|--------------|--|--|--|--|----|----|--------|--------|--------|
|              |  |  |  |  | 0  | 0  | 26,963 | 32,016 | 58,979 |

|                 |       |       |       |       |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    |       |       | 07:30 | 07:15 | 07:15 | PM Peak Hour    |       |       | 16:30 | 16:00 | 16:30 |
| AM Pk Volume    |       |       | 1798  | 2328  | 4108  | PM Pk Volume    |       |       | 2028  | 2489  | 4495  |
| Pk Hr Factor    |       |       | 0.927 | 0.883 | 0.898 | Pk Hr Factor    |       |       | 0.973 | 0.941 | 0.967 |
| 7 - 9 Volume    | 0     | 0     | 3228  | 4316  | 7544  | 4 - 6 Volume    | 0     | 0     | 3770  | 4862  | 8632  |
| 7 - 9 Peak Hour |       |       | 07:30 | 07:15 | 07:15 | 4 - 6 Peak Hour |       |       | 16:30 | 16:00 | 16:30 |
| 7 - 9 Pk Volume | 0     | 0     | 1798  | 2328  | 4108  | 4 - 6 Pk Volume | 0     | 0     | 2028  | 2489  | 4495  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.927 | 0.883 | 0.898 | Pk Hr Factor    | 0.000 | 0.000 | 0.973 | 0.941 | 0.967 |

**VOLUME**

Lambert Rd W/O Pointe Dr

Day: Tuesday  
Date: 11/27/2018

City: Brea  
Project #: CA18\_1232\_001

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB     | WB     | Total  |       |       |      |
|----------------|----|----|-------|-------|-------|----------------|--------|--------|--------|-------|-------|------|
|                |    |    |       |       | 0     | 0              | 24,151 | 19,827 | 43,978 |       |       |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB     | SB     | EB     | WB    | TOTAL |      |
| 00:00          |    |    | 27    | 15    | 42    | 12:00          |        |        | 235    | 303   | 538   |      |
| 00:15          |    |    | 25    | 9     | 34    | 12:15          |        |        | 222    | 301   | 523   |      |
| 00:30          |    |    | 16    | 9     | 25    | 12:30          |        |        | 250    | 270   | 520   |      |
| 00:45          |    |    | 20    | 88    | 10    | 43             | 12:45  |        | 262    | 969   | 265   | 1139 |
| 01:00          |    |    | 16    | 11    | 27    | 13:00          |        |        | 291    | 299   | 590   |      |
| 01:15          |    |    | 15    | 6     | 21    | 13:15          |        |        | 309    | 258   | 567   |      |
| 01:30          |    |    | 10    | 6     | 16    | 13:30          |        |        | 352    | 354   | 706   |      |
| 01:45          |    |    | 20    | 61    | 2     | 25             | 13:45  |        | 374    | 1326  | 302   | 1213 |
| 02:00          |    |    | 11    | 4     | 15    | 14:00          |        |        | 324    | 278   | 602   |      |
| 02:15          |    |    | 13    | 9     | 22    | 14:15          |        |        | 352    | 268   | 620   |      |
| 02:30          |    |    | 11    | 11    | 22    | 14:30          |        |        | 437    | 370   | 807   |      |
| 02:45          |    |    | 12    | 47    | 14    | 38             | 14:45  |        | 479    | 1592  | 447   | 1363 |
| 03:00          |    |    | 8     | 8     | 16    | 15:00          |        |        | 496    | 340   | 836   |      |
| 03:15          |    |    | 12    | 8     | 20    | 15:15          |        |        | 409    | 341   | 750   |      |
| 03:30          |    |    | 13    | 17    | 30    | 15:30          |        |        | 403    | 403   | 806   |      |
| 03:45          |    |    | 20    | 53    | 20    | 53             | 15:45  |        | 412    | 1720  | 383   | 1467 |
| 04:00          |    |    | 20    | 27    | 47    | 16:00          |        |        | 422    | 451   | 873   |      |
| 04:15          |    |    | 32    | 48    | 80    | 16:15          |        |        | 409    | 405   | 814   |      |
| 04:30          |    |    | 66    | 64    | 130   | 16:30          |        |        | 418    | 487   | 905   |      |
| 04:45          |    |    | 103   | 221   | 98    | 237            | 16:45  |        | 431    | 1680  | 439   | 1782 |
| 05:00          |    |    | 73    | 120   | 193   | 17:00          |        |        | 473    | 439   | 912   |      |
| 05:15          |    |    | 99    | 161   | 260   | 17:15          |        |        | 519    | 309   | 828   |      |
| 05:30          |    |    | 143   | 210   | 353   | 17:30          |        |        | 550    | 419   | 969   |      |
| 05:45          |    |    | 257   | 572   | 207   | 698            | 17:45  |        | 508    | 2050  | 341   | 1508 |
| 06:00          |    |    | 237   | 207   | 444   | 18:00          |        |        | 441    | 370   | 811   |      |
| 06:15          |    |    | 288   | 214   | 502   | 18:15          |        |        | 403    | 368   | 771   |      |
| 06:30          |    |    | 507   | 220   | 727   | 18:30          |        |        | 407    | 274   | 681   |      |
| 06:45          |    |    | 548   | 1580  | 379   | 1020           | 18:45  |        | 379    | 1630  | 243   | 1255 |
| 07:00          |    |    | 469   | 299   | 768   | 19:00          |        |        | 331    | 245   | 576   |      |
| 07:15          |    |    | 510   | 304   | 814   | 19:15          |        |        | 298    | 170   | 468   |      |
| 07:30          |    |    | 577   | 349   | 926   | 19:30          |        |        | 251    | 176   | 427   |      |
| 07:45          |    |    | 636   | 2192  | 439   | 1391           | 19:45  |        | 226    | 1106  | 162   | 753  |
| 08:00          |    |    | 608   | 441   | 1049  | 20:00          |        |        | 242    | 236   | 478   |      |
| 08:15          |    |    | 579   | 350   | 929   | 20:15          |        |        | 210    | 204   | 414   |      |
| 08:30          |    |    | 510   | 309   | 819   | 20:30          |        |        | 158    | 141   | 299   |      |
| 08:45          |    |    | 498   | 2195  | 317   | 1417           | 20:45  |        | 157    | 767   | 123   | 704  |
| 09:00          |    |    | 388   | 331   | 719   | 21:00          |        |        | 138    | 98    | 236   |      |
| 09:15          |    |    | 328   | 310   | 638   | 21:15          |        |        | 146    | 78    | 224   |      |
| 09:30          |    |    | 278   | 312   | 590   | 21:30          |        |        | 127    | 71    | 198   |      |
| 09:45          |    |    | 296   | 1290  | 276   | 1229           | 21:45  |        | 105    | 516   | 67    | 314  |
| 10:00          |    |    | 224   | 285   | 509   | 22:00          |        |        | 96     | 63    | 159   |      |
| 10:15          |    |    | 240   | 214   | 454   | 22:15          |        |        | 100    | 40    | 140   |      |
| 10:30          |    |    | 248   | 189   | 437   | 22:30          |        |        | 77     | 35    | 112   |      |
| 10:45          |    |    | 262   | 974   | 230   | 918            | 22:45  |        | 64     | 337   | 44    | 182  |
| 11:00          |    |    | 213   | 253   | 466   | 23:00          |        |        | 60     | 45    | 105   |      |
| 11:15          |    |    | 267   | 245   | 512   | 23:15          |        |        | 46     | 26    | 72    |      |
| 11:30          |    |    | 241   | 245   | 486   | 23:30          |        |        | 41     | 31    | 72    |      |
| 11:45          |    |    | 280   | 1001  | 205   | 948            | 23:45  |        | 37     | 184   | 28    | 130  |
| <b>TOTALS</b>  |    |    | 10274 | 8017  | 18291 | <b>TOTALS</b>  |        |        | 13877  | 11810 | 25687 |      |
| <b>SPLIT %</b> |    |    | 56.2% | 43.8% | 41.6% | <b>SPLIT %</b> |        |        | 54.0%  | 46.0% | 58.4% |      |

| DAILY TOTALS |  |  |  |  | NB | SB | EB     | WB     | Total  |
|--------------|--|--|--|--|----|----|--------|--------|--------|
|              |  |  |  |  | 0  | 0  | 24,151 | 19,827 | 43,978 |

|                 |       |       |       |       |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    |       |       | 07:30 | 07:30 | 07:30 | PM Peak Hour    |       |       | 17:00 | 16:00 | 16:45 |
| AM Pk Volume    |       |       | 2400  | 1579  | 3979  | PM Pk Volume    |       |       | 2050  | 1782  | 3579  |
| Pk Hr Factor    |       |       | 0.943 | 0.895 | 0.925 | Pk Hr Factor    |       |       | 0.932 | 0.915 | 0.923 |
| 7 - 9 Volume    | 0     | 0     | 4387  | 2808  | 7195  | 4 - 6 Volume    | 0     | 0     | 3730  | 3290  | 7020  |
| 7 - 9 Peak Hour |       |       | 07:30 | 07:30 | 07:30 | 4 - 6 Peak Hour |       |       | 17:00 | 16:00 | 16:45 |
| 7 - 9 Pk Volume | 0     | 0     | 2400  | 1579  | 3979  | 4 - 6 Pk Volume | 0     | 0     | 2050  | 1782  | 3579  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.943 | 0.895 | 0.925 | Pk Hr Factor    | 0.000 | 0.000 | 0.932 | 0.915 | 0.923 |

**VOLUME**

Lambert Rd E/O Associated Rd

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1232\_002

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB     | WB     | Total  |       |       |
|----------------|----|----|-------|-------|-------|----------------|--------|--------|--------|-------|-------|
|                |    |    |       |       | 0     | 0              | 18,544 | 14,983 | 33,527 |       |       |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB     | SB     | EB     | WB    | TOTAL |
| 00:00          |    |    | 25    | 16    | 41    | 12:00          |        |        | 188    | 202   | 390   |
| 00:15          |    |    | 22    | 8     | 30    | 12:15          |        |        | 226    | 174   | 400   |
| 00:30          |    |    | 22    | 9     | 31    | 12:30          |        |        | 192    | 192   | 384   |
| 00:45          |    |    | 17    | 86    | 24    | 12:45          |        | 796    | 190    | 758   | 380   |
| 01:00          |    |    | 13    | 9     | 22    | 13:00          |        |        | 250    | 226   | 476   |
| 01:15          |    |    | 6     | 6     | 12    | 13:15          |        |        | 222    | 182   | 404   |
| 01:30          |    |    | 17    | 2     | 19    | 13:30          |        |        | 241    | 259   | 500   |
| 01:45          |    |    | 8     | 44    | 9     | 13:45          |        | 924    | 211    | 857   | 401   |
| 02:00          |    |    | 4     | 3     | 7     | 14:00          |        |        | 223    | 191   | 414   |
| 02:15          |    |    | 8     | 10    | 18    | 14:15          |        |        | 232    | 226   | 458   |
| 02:30          |    |    | 11    | 8     | 19    | 14:30          |        |        | 286    | 267   | 553   |
| 02:45          |    |    | 3     | 26    | 13    | 14:45          |        | 1091   | 350    | 947   | 613   |
| 03:00          |    |    | 9     | 5     | 14    | 15:00          |        |        | 327    | 214   | 541   |
| 03:15          |    |    | 9     | 7     | 16    | 15:15          |        |        | 350    | 237   | 587   |
| 03:30          |    |    | 10    | 14    | 24    | 15:30          |        |        | 361    | 246   | 607   |
| 03:45          |    |    | 11    | 39    | 14    | 15:45          |        | 947    | 385    | 250   | 635   |
| 04:00          |    |    | 21    | 22    | 43    | 16:00          |        |        | 369    | 281   | 650   |
| 04:15          |    |    | 34    | 37    | 71    | 16:15          |        |        | 361    | 263   | 624   |
| 04:30          |    |    | 58    | 56    | 114   | 16:30          |        |        | 403    | 327   | 730   |
| 04:45          |    |    | 89    | 202   | 89    | 16:45          |        | 1168   | 403    | 297   | 700   |
| 05:00          |    |    | 52    | 110   | 162   | 17:00          |        |        | 398    | 328   | 726   |
| 05:15          |    |    | 74    | 171   | 245   | 17:15          |        |        | 401    | 259   | 660   |
| 05:30          |    |    | 122   | 209   | 331   | 17:30          |        |        | 391    | 232   | 623   |
| 05:45          |    |    | 198   | 446   | 198   | 17:45          |        | 1050   | 376    | 231   | 607   |
| 06:00          |    |    | 154   | 203   | 357   | 18:00          |        |        | 375    | 264   | 639   |
| 06:15          |    |    | 234   | 191   | 425   | 18:15          |        |        | 326    | 263   | 589   |
| 06:30          |    |    | 329   | 220   | 549   | 18:30          |        |        | 360    | 207   | 567   |
| 06:45          |    |    | 416   | 1133  | 293   | 18:45          |        | 908    | 323    | 1384  | 497   |
| 07:00          |    |    | 324   | 219   | 543   | 19:00          |        |        | 320    | 137   | 457   |
| 07:15          |    |    | 391   | 271   | 662   | 19:15          |        |        | 251    | 124   | 375   |
| 07:30          |    |    | 384   | 326   | 710   | 19:30          |        |        | 227    | 122   | 349   |
| 07:45          |    |    | 426   | 1525  | 360   | 19:45          |        | 478    | 203    | 1001  | 298   |
| 08:00          |    |    | 417   | 350   | 767   | 20:00          |        |        | 188    | 152   | 340   |
| 08:15          |    |    | 377   | 325   | 702   | 20:15          |        |        | 161    | 166   | 327   |
| 08:30          |    |    | 348   | 318   | 666   | 20:30          |        |        | 159    | 101   | 260   |
| 08:45          |    |    | 339   | 1481  | 306   | 20:45          |        | 1157   | 159    | 667   | 230   |
| 09:00          |    |    | 301   | 252   | 553   | 21:00          |        |        | 139    | 71    | 210   |
| 09:15          |    |    | 199   | 267   | 466   | 21:15          |        |        | 107    | 67    | 174   |
| 09:30          |    |    | 189   | 267   | 456   | 21:30          |        |        | 88     | 47    | 135   |
| 09:45          |    |    | 176   | 865   | 252   | 21:45          |        | 629    | 68     | 402   | 110   |
| 10:00          |    |    | 183   | 233   | 416   | 22:00          |        |        | 84     | 47    | 131   |
| 10:15          |    |    | 179   | 181   | 360   | 22:15          |        |        | 58     | 35    | 93    |
| 10:30          |    |    | 190   | 176   | 366   | 22:30          |        |        | 67     | 22    | 89    |
| 10:45          |    |    | 180   | 732   | 173   | 22:45          |        | 388    | 48     | 257   | 75    |
| 11:00          |    |    | 196   | 186   | 382   | 23:00          |        |        | 42     | 37    | 79    |
| 11:15          |    |    | 179   | 189   | 368   | 23:15          |        |        | 35     | 19    | 54    |
| 11:30          |    |    | 202   | 172   | 374   | 23:30          |        |        | 35     | 29    | 64    |
| 11:45          |    |    | 207   | 784   | 163   | 23:45          |        | 239    | 22     | 134   | 42    |
| <b>TOTALS</b>  |    |    | 7363  | 6917  | 14280 | <b>TOTALS</b>  |        |        | 11181  | 8066  | 19247 |
| <b>SPLIT %</b> |    |    | 51.6% | 48.4% | 42.6% | <b>SPLIT %</b> |        |        | 58.1%  | 41.9% | 57.4% |

| DAILY TOTALS |  |  |  |  | NB | SB | EB     | WB     | Total  |
|--------------|--|--|--|--|----|----|--------|--------|--------|
|              |  |  |  |  | 0  | 0  | 18,544 | 14,983 | 33,527 |

|                 |       |       |       |       |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    |       |       | 07:15 | 07:30 | 07:30 | PM Peak Hour    |       |       | 16:30 | 16:15 | 16:30 |
| AM Pk Volume    |       |       | 1618  | 1361  | 2965  | PM Pk Volume    |       |       | 1605  | 1215  | 2816  |
| Pk Hr Factor    |       |       | 0.950 | 0.945 | 0.943 | Pk Hr Factor    |       |       | 0.996 | 0.926 | 0.964 |
| 7 - 9 Volume    | 0     | 0     | 3006  | 2475  | 5481  | 4 - 6 Volume    | 0     | 0     | 3102  | 2218  | 5320  |
| 7 - 9 Peak Hour |       |       | 07:15 | 07:30 | 07:30 | 4 - 6 Peak Hour |       |       | 16:30 | 16:15 | 16:30 |
| 7 - 9 Pk Volume | 0     | 0     | 1618  | 1361  | 2965  | 4 - 6 Pk Volume | 0     | 0     | 1605  | 1215  | 2816  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.950 | 0.945 | 0.943 | Pk Hr Factor    | 0.000 | 0.000 | 0.996 | 0.926 | 0.964 |

**VOLUME**

Lambert Rd W/O Santa Fe Rd/Kraemer Blvd

Day: Tuesday  
Date: 11/13/2018City: Brea  
Project #: CA18\_1232\_003

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB     | WB     | Total  |       |       |      |     |      |
|----------------|----|----|-------|-------|-------|----------------|--------|--------|--------|-------|-------|------|-----|------|
|                |    |    |       |       | 0     | 0              | 18,802 | 14,273 | 33,075 |       |       |      |     |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB     | SB     | EB     | WB    | TOTAL |      |     |      |
| 00:00          |    |    | 25    | 8     | 33    | 12:00          |        |        | 191    | 204   | 395   |      |     |      |
| 00:15          |    |    | 20    | 2     | 22    | 12:15          |        |        | 227    | 175   | 402   |      |     |      |
| 00:30          |    |    | 24    | 8     | 32    | 12:30          |        |        | 185    | 193   | 378   |      |     |      |
| 00:45          |    |    | 15    | 84    | 9     | 27             | 24     | 111    | 183    | 786   | 181   | 753  | 364 | 1539 |
| 01:00          |    |    | 15    | 6     | 21    | 13:00          |        |        | 239    | 220   | 459   |      |     |      |
| 01:15          |    |    | 6     | 6     | 12    | 13:15          |        |        | 220    | 178   | 398   |      |     |      |
| 01:30          |    |    | 14    | 1     | 15    | 13:30          |        |        | 232    | 241   | 473   |      |     |      |
| 01:45          |    |    | 10    | 45    | 1     | 14             | 11     | 59     | 218    | 909   | 188   | 827  | 406 | 1736 |
| 02:00          |    |    | 5     | 3     | 8     | 14:00          |        |        | 230    | 197   | 427   |      |     |      |
| 02:15          |    |    | 9     | 9     | 18    | 14:15          |        |        | 224    | 205   | 429   |      |     |      |
| 02:30          |    |    | 12    | 8     | 20    | 14:30          |        |        | 258    | 264   | 522   |      |     |      |
| 02:45          |    |    | 4     | 30    | 13    | 33             | 17     | 63     | 329    | 1041  | 220   | 886  | 549 | 1927 |
| 03:00          |    |    | 8     | 5     | 13    | 15:00          |        |        | 320    | 216   | 536   |      |     |      |
| 03:15          |    |    | 9     | 7     | 16    | 15:15          |        |        | 337    | 230   | 567   |      |     |      |
| 03:30          |    |    | 11    | 14    | 25    | 15:30          |        |        | 383    | 242   | 625   |      |     |      |
| 03:45          |    |    | 12    | 40    | 13    | 39             | 25     | 79     | 366    | 1406  | 243   | 931  | 609 | 2337 |
| 04:00          |    |    | 19    | 22    | 41    | 16:00          |        |        | 374    | 286   | 660   |      |     |      |
| 04:15          |    |    | 35    | 35    | 70    | 16:15          |        |        | 346    | 271   | 617   |      |     |      |
| 04:30          |    |    | 55    | 57    | 112   | 16:30          |        |        | 423    | 305   | 728   |      |     |      |
| 04:45          |    |    | 99    | 208   | 80    | 194            | 179    | 402    | 417    | 1560  | 291   | 1153 | 708 | 2713 |
| 05:00          |    |    | 53    | 95    | 148   | 17:00          |        |        | 407    | 326   | 733   |      |     |      |
| 05:15          |    |    | 81    | 152   | 233   | 17:15          |        |        | 398    | 243   | 641   |      |     |      |
| 05:30          |    |    | 126   | 195   | 321   | 17:30          |        |        | 397    | 223   | 620   |      |     |      |
| 05:45          |    |    | 208   | 468   | 173   | 615            | 381    | 1083   | 447    | 1649  | 230   | 1022 | 677 | 2671 |
| 06:00          |    |    | 164   | 185   | 349   | 18:00          |        |        | 390    | 249   | 639   |      |     |      |
| 06:15          |    |    | 232   | 165   | 397   | 18:15          |        |        | 342    | 235   | 577   |      |     |      |
| 06:30          |    |    | 326   | 213   | 539   | 18:30          |        |        | 398    | 201   | 599   |      |     |      |
| 06:45          |    |    | 442   | 1164  | 267   | 830            | 709    | 1994   | 308    | 1438  | 176   | 861  | 484 | 2299 |
| 07:00          |    |    | 358   | 207   | 565   | 19:00          |        |        | 311    | 134   | 445   |      |     |      |
| 07:15          |    |    | 417   | 249   | 666   | 19:15          |        |        | 273    | 113   | 386   |      |     |      |
| 07:30          |    |    | 400   | 301   | 701   | 19:30          |        |        | 211    | 115   | 326   |      |     |      |
| 07:45          |    |    | 412   | 1587  | 318   | 1075           | 730    | 2662   | 200    | 995   | 87    | 449  | 287 | 1444 |
| 08:00          |    |    | 462   | 340   | 802   | 20:00          |        |        | 185    | 163   | 348   |      |     |      |
| 08:15          |    |    | 368   | 312   | 680   | 20:15          |        |        | 160    | 153   | 313   |      |     |      |
| 08:30          |    |    | 368   | 283   | 651   | 20:30          |        |        | 146    | 101   | 247   |      |     |      |
| 08:45          |    |    | 341   | 1539  | 287   | 1222           | 628    | 2761   | 159    | 650   | 66    | 483  | 225 | 1133 |
| 09:00          |    |    | 289   | 239   | 528   | 21:00          |        |        | 135    | 71    | 206   |      |     |      |
| 09:15          |    |    | 212   | 268   | 480   | 21:15          |        |        | 124    | 79    | 203   |      |     |      |
| 09:30          |    |    | 201   | 255   | 456   | 21:30          |        |        | 79     | 41    | 120   |      |     |      |
| 09:45          |    |    | 184   | 886   | 225   | 987            | 409    | 1873   | 72     | 410   | 42    | 233  | 114 | 643  |
| 10:00          |    |    | 188   | 236   | 424   | 22:00          |        |        | 81     | 40    | 121   |      |     |      |
| 10:15          |    |    | 175   | 171   | 346   | 22:15          |        |        | 59     | 37    | 96    |      |     |      |
| 10:30          |    |    | 188   | 161   | 349   | 22:30          |        |        | 67     | 22    | 89    |      |     |      |
| 10:45          |    |    | 187   | 738   | 171   | 739            | 358    | 1477   | 48     | 255   | 23    | 122  | 71  | 377  |
| 11:00          |    |    | 201   | 169   | 370   | 23:00          |        |        | 42     | 35    | 77    |      |     |      |
| 11:15          |    |    | 182   | 187   | 369   | 23:15          |        |        | 29     | 19    | 48    |      |     |      |
| 11:30          |    |    | 196   | 163   | 359   | 23:30          |        |        | 33     | 25    | 58    |      |     |      |
| 11:45          |    |    | 208   | 787   | 162   | 681            | 370    | 1468   | 23     | 127   | 18    | 97   | 41  | 224  |
| <b>TOTALS</b>  |    |    | 7576  | 6456  | 14032 | <b>TOTALS</b>  |        |        | 11226  | 7817  | 19043 |      |     |      |
| <b>SPLIT %</b> |    |    | 54.0% | 46.0% | 42.4% | <b>SPLIT %</b> |        |        | 59.0%  | 41.0% | 57.6% |      |     |      |

| DAILY TOTALS    |       |       |       |       | NB    | SB              | EB     | WB     | Total  |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|--------|--------|--------|-------|-------|
|                 |       |       |       |       | 0     | 0               | 18,802 | 14,273 | 33,075 |       |       |
| AM Peak Hour    |       |       | 07:15 | 07:30 | 07:30 | PM Peak Hour    |        |        | 17:00  | 16:15 | 16:30 |
| AM Pk Volume    |       |       | 1691  | 1271  | 2913  | PM Pk Volume    |        |        | 1649   | 1193  | 2810  |
| Pk Hr Factor    |       |       | 0.915 | 0.935 | 0.908 | Pk Hr Factor    |        |        | 0.922  | 0.915 | 0.958 |
| 7 - 9 Volume    | 0     | 0     | 3126  | 2297  | 5423  | 4 - 6 Volume    | 0      | 0      | 3209   | 2175  | 5384  |
| 7 - 9 Peak Hour |       |       | 07:15 | 07:30 | 07:30 | 4 - 6 Peak Hour |        |        | 17:00  | 16:15 | 16:30 |
| 7 - 9 Pk Volume | 0     | 0     | 1691  | 1271  | 2913  | 4 - 6 Pk Volume | 0      | 0      | 1649   | 1193  | 2810  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.915 | 0.935 | 0.908 | Pk Hr Factor    | 0.000  | 0.000  | 0.922  | 0.915 | 0.958 |

**VOLUME**

Lambert Rd E/O Kraemer Blvd

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1232\_004

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB     | WB    | Total  |       |       |     |
|----------------|----|----|-------|-------|-------|----------------|--------|-------|--------|-------|-------|-----|
|                |    |    |       |       | 0     | 0              | 10,682 | 8,969 | 19,651 |       |       |     |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB     | SB    | EB     | WB    | TOTAL |     |
| 00:00          |    |    | 17    | 6     | 23    | 12:00          |        |       | 92     | 97    | 189   |     |
| 00:15          |    |    | 18    | 2     | 20    | 12:15          |        |       | 127    | 115   | 242   |     |
| 00:30          |    |    | 14    | 2     | 16    | 12:30          |        |       | 113    | 126   | 239   |     |
| 00:45          |    |    | 9     | 58    | 7     | 17             | 12:45  |       | 95     | 427   | 108   | 446 |
| 01:00          |    |    | 11    | 4     | 15    | 13:00          |        |       | 118    | 112   | 230   |     |
| 01:15          |    |    | 3     | 4     | 7     | 13:15          |        |       | 124    | 107   | 231   |     |
| 01:30          |    |    | 10    | 0     | 10    | 13:30          |        |       | 135    | 109   | 244   |     |
| 01:45          |    |    | 5     | 29    | 0     | 8              | 13:45  |       | 139    | 516   | 97    | 425 |
| 02:00          |    |    | 1     | 2     | 3     | 14:00          |        |       | 136    | 115   | 251   |     |
| 02:15          |    |    | 5     | 5     | 10    | 14:15          |        |       | 191    | 112   | 303   |     |
| 02:30          |    |    | 6     | 4     | 10    | 14:30          |        |       | 194    | 110   | 304   |     |
| 02:45          |    |    | 1     | 13    | 10    | 21             | 14:45  |       | 237    | 758   | 107   | 444 |
| 03:00          |    |    | 5     | 6     | 11    | 15:00          |        |       | 233    | 106   | 339   |     |
| 03:15          |    |    | 3     | 7     | 10    | 15:15          |        |       | 238    | 130   | 368   |     |
| 03:30          |    |    | 5     | 10    | 15    | 15:30          |        |       | 295    | 108   | 403   |     |
| 03:45          |    |    | 5     | 18    | 12    | 35             | 15:45  |       | 279    | 1045  | 124   | 468 |
| 04:00          |    |    | 9     | 16    | 25    | 16:00          |        |       | 265    | 119   | 384   |     |
| 04:15          |    |    | 15    | 29    | 44    | 16:15          |        |       | 269    | 160   | 429   |     |
| 04:30          |    |    | 21    | 44    | 65    | 16:30          |        |       | 282    | 147   | 429   |     |
| 04:45          |    |    | 27    | 72    | 51    | 140            | 16:45  |       | 284    | 1100  | 138   | 564 |
| 05:00          |    |    | 23    | 75    | 98    | 17:00          |        |       | 229    | 120   | 349   |     |
| 05:15          |    |    | 35    | 150   | 185   | 17:15          |        |       | 272    | 113   | 385   |     |
| 05:30          |    |    | 65    | 186   | 251   | 17:30          |        |       | 251    | 107   | 358   |     |
| 05:45          |    |    | 92    | 215   | 175   | 586            | 17:45  |       | 226    | 978   | 114   | 454 |
| 06:00          |    |    | 65    | 174   | 239   | 18:00          |        |       | 250    | 132   | 382   |     |
| 06:15          |    |    | 73    | 166   | 239   | 18:15          |        |       | 239    | 122   | 361   |     |
| 06:30          |    |    | 128   | 190   | 318   | 18:30          |        |       | 235    | 92    | 327   |     |
| 06:45          |    |    | 155   | 421   | 181   | 711            | 18:45  |       | 210    | 934   | 87    | 433 |
| 07:00          |    |    | 152   | 170   | 322   | 19:00          |        |       | 219    | 71    | 290   |     |
| 07:15          |    |    | 167   | 202   | 369   | 19:15          |        |       | 199    | 57    | 256   |     |
| 07:30          |    |    | 167   | 219   | 386   | 19:30          |        |       | 154    | 59    | 213   |     |
| 07:45          |    |    | 160   | 646   | 227   | 818            | 19:45  |       | 123    | 695   | 49    | 236 |
| 08:00          |    |    | 160   | 246   | 406   | 20:00          |        |       | 110    | 71    | 181   |     |
| 08:15          |    |    | 155   | 232   | 387   | 20:15          |        |       | 101    | 61    | 162   |     |
| 08:30          |    |    | 160   | 262   | 422   | 20:30          |        |       | 89     | 52    | 141   |     |
| 08:45          |    |    | 137   | 612   | 242   | 982            | 20:45  |       | 112    | 412   | 40    | 224 |
| 09:00          |    |    | 124   | 196   | 320   | 21:00          |        |       | 78     | 48    | 126   |     |
| 09:15          |    |    | 101   | 205   | 306   | 21:15          |        |       | 70     | 43    | 113   |     |
| 09:30          |    |    | 90    | 191   | 281   | 21:30          |        |       | 65     | 30    | 95    |     |
| 09:45          |    |    | 89    | 404   | 182   | 774            | 21:45  |       | 35     | 248   | 21    | 142 |
| 10:00          |    |    | 101   | 166   | 267   | 22:00          |        |       | 48     | 19    | 67    |     |
| 10:15          |    |    | 81    | 116   | 197   | 22:15          |        |       | 34     | 20    | 54    |     |
| 10:30          |    |    | 97    | 118   | 215   | 22:30          |        |       | 43     | 13    | 56    |     |
| 10:45          |    |    | 102   | 381   | 111   | 511            | 22:45  |       | 27     | 152   | 11    | 63  |
| 11:00          |    |    | 106   | 110   | 216   | 23:00          |        |       | 27     | 19    | 46    |     |
| 11:15          |    |    | 110   | 116   | 226   | 23:15          |        |       | 24     | 8     | 32    |     |
| 11:30          |    |    | 119   | 92    | 211   | 23:30          |        |       | 21     | 8     | 29    |     |
| 11:45          |    |    | 123   | 458   | 102   | 420            | 23:45  |       | 18     | 90    | 12    | 47  |
| <b>TOTALS</b>  |    |    | 3327  | 5023  | 8350  | <b>TOTALS</b>  |        |       | 7355   | 3946  | 11301 |     |
| <b>SPLIT %</b> |    |    | 39.8% | 60.2% | 42.5% | <b>SPLIT %</b> |        |       | 65.1%  | 34.9% | 57.5% |     |

| DAILY TOTALS    |       |       |       |       | NB    | SB              | EB     | WB    | Total  |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|--------|-------|--------|-------|-------|
|                 |       |       |       |       | 0     | 0               | 10,682 | 8,969 | 19,651 |       |       |
| AM Peak Hour    |       |       | 07:15 | 08:00 | 07:45 | PM Peak Hour    |        |       | 15:30  | 16:15 | 16:00 |
| AM Pk Volume    |       |       | 654   | 982   | 1602  | PM Pk Volume    |        |       | 1108   | 565   | 1664  |
| Pk Hr Factor    |       |       | 0.979 | 0.937 | 0.949 | Pk Hr Factor    |        |       | 0.939  | 0.883 | 0.970 |
| 7 - 9 Volume    | 0     | 0     | 1258  | 1800  | 3058  | 4 - 6 Volume    | 0      | 0     | 2078   | 1018  | 3096  |
| 7 - 9 Peak Hour |       |       | 07:15 | 08:00 | 07:45 | 4 - 6 Peak Hour |        |       | 16:00  | 16:15 | 16:00 |
| 7 - 9 Pk Volume | 0     | 0     | 654   | 982   | 1602  | 4 - 6 Pk Volume | 0      | 0     | 1100   | 565   | 1664  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.979 | 0.937 | 0.949 | Pk Hr Factor    | 0.000  | 0.000 | 0.968  | 0.883 | 0.970 |

**VOLUME**

Lambert Rd W/O Valencia Ave

Day: Tuesday  
Date: 11/27/2018

City: Brea  
Project #: CA18\_1232\_005

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB     | WB    | Total  |       |       |     |     |      |
|----------------|----|----|-------|-------|-------|----------------|--------|-------|--------|-------|-------|-----|-----|------|
|                |    |    |       |       | 0     | 0              | 10,535 | 8,710 | 19,245 |       |       |     |     |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB     | SB    | EB     | WB    | TOTAL |     |     |      |
| 00:00          |    |    | 17    | 3     | 20    | 12:00          |        |       | 91     | 122   | 213   |     |     |      |
| 00:15          |    |    | 19    | 11    | 30    | 12:15          |        |       | 118    | 102   | 220   |     |     |      |
| 00:30          |    |    | 14    | 7     | 21    | 12:30          |        |       | 118    | 91    | 209   |     |     |      |
| 00:45          |    |    | 8     | 58    | 1     | 22             | 12:45  |       | 96     | 423   | 120   | 435 | 216 | 858  |
| 01:00          |    |    | 12    | 4     | 16    | 13:00          |        |       | 114    | 89    | 203   |     |     |      |
| 01:15          |    |    | 3     | 4     | 7     | 13:15          |        |       | 120    | 103   | 223   |     |     |      |
| 01:30          |    |    | 10    | 1     | 11    | 13:30          |        |       | 132    | 88    | 220   |     |     |      |
| 01:45          |    |    | 5     | 30    | 3     | 12             | 13:45  |       | 131    | 497   | 122   | 402 | 253 | 899  |
| 02:00          |    |    | 3     | 3     | 6     | 14:00          |        |       | 127    | 123   | 250   |     |     |      |
| 02:15          |    |    | 5     | 3     | 8     | 14:15          |        |       | 193    | 126   | 319   |     |     |      |
| 02:30          |    |    | 6     | 7     | 13    | 14:30          |        |       | 189    | 113   | 302   |     |     |      |
| 02:45          |    |    | 1     | 15    | 10    | 23             | 14:45  |       | 232    | 741   | 111   | 473 | 343 | 1214 |
| 03:00          |    |    | 5     | 3     | 8     | 15:00          |        |       | 225    | 123   | 348   |     |     |      |
| 03:15          |    |    | 3     | 4     | 7     | 15:15          |        |       | 232    | 113   | 345   |     |     |      |
| 03:30          |    |    | 5     | 5     | 10    | 15:30          |        |       | 282    | 131   | 413   |     |     |      |
| 03:45          |    |    | 5     | 18    | 8     | 20             | 15:45  |       | 264    | 1003  | 127   | 494 | 391 | 1497 |
| 04:00          |    |    | 9     | 20    | 29    | 16:00          |        |       | 285    | 118   | 403   |     |     |      |
| 04:15          |    |    | 15    | 37    | 52    | 16:15          |        |       | 261    | 149   | 410   |     |     |      |
| 04:30          |    |    | 21    | 50    | 71    | 16:30          |        |       | 274    | 104   | 378   |     |     |      |
| 04:45          |    |    | 26    | 71    | 48    | 155            | 16:45  |       | 278    | 1098  | 103   | 474 | 381 | 1572 |
| 05:00          |    |    | 24    | 74    | 98    | 17:00          |        |       | 230    | 127   | 357   |     |     |      |
| 05:15          |    |    | 34    | 101   | 135   | 17:15          |        |       | 271    | 124   | 395   |     |     |      |
| 05:30          |    |    | 65    | 161   | 226   | 17:30          |        |       | 251    | 123   | 374   |     |     |      |
| 05:45          |    |    | 92    | 215   | 159   | 495            | 17:45  |       | 224    | 976   | 138   | 512 | 362 | 1488 |
| 06:00          |    |    | 65    | 166   | 231   | 18:00          |        |       | 242    | 124   | 366   |     |     |      |
| 06:15          |    |    | 74    | 155   | 229   | 18:15          |        |       | 236    | 118   | 354   |     |     |      |
| 06:30          |    |    | 124   | 154   | 278   | 18:30          |        |       | 236    | 104   | 340   |     |     |      |
| 06:45          |    |    | 151   | 414   | 163   | 638            | 18:45  |       | 208    | 922   | 76    | 422 | 284 | 1344 |
| 07:00          |    |    | 145   | 186   | 331   | 19:00          |        |       | 222    | 86    | 308   |     |     |      |
| 07:15          |    |    | 176   | 200   | 376   | 19:15          |        |       | 201    | 70    | 271   |     |     |      |
| 07:30          |    |    | 162   | 216   | 378   | 19:30          |        |       | 145    | 51    | 196   |     |     |      |
| 07:45          |    |    | 156   | 639   | 223   | 825            | 19:45  |       | 127    | 695   | 38    | 245 | 165 | 940  |
| 08:00          |    |    | 157   | 233   | 390   | 20:00          |        |       | 115    | 80    | 195   |     |     |      |
| 08:15          |    |    | 153   | 256   | 409   | 20:15          |        |       | 100    | 54    | 154   |     |     |      |
| 08:30          |    |    | 152   | 265   | 417   | 20:30          |        |       | 79     | 49    | 128   |     |     |      |
| 08:45          |    |    | 143   | 605   | 219   | 973            | 20:45  |       | 113    | 407   | 48    | 231 | 161 | 638  |
| 09:00          |    |    | 120   | 168   | 288   | 21:00          |        |       | 82     | 44    | 126   |     |     |      |
| 09:15          |    |    | 97    | 192   | 289   | 21:15          |        |       | 70     | 50    | 120   |     |     |      |
| 09:30          |    |    | 89    | 163   | 252   | 21:30          |        |       | 71     | 30    | 101   |     |     |      |
| 09:45          |    |    | 89    | 395   | 148   | 671            | 21:45  |       | 32     | 255   | 22    | 146 | 54  | 401  |
| 10:00          |    |    | 92    | 115   | 207   | 22:00          |        |       | 48     | 48    | 96    |     |     |      |
| 10:15          |    |    | 81    | 112   | 193   | 22:15          |        |       | 32     | 28    | 60    |     |     |      |
| 10:30          |    |    | 93    | 85    | 178   | 22:30          |        |       | 43     | 29    | 72    |     |     |      |
| 10:45          |    |    | 101   | 367   | 129   | 441            | 22:45  |       | 25     | 148   | 9     | 114 | 34  | 262  |
| 11:00          |    |    | 110   | 116   | 226   | 23:00          |        |       | 27     | 7     | 34    |     |     |      |
| 11:15          |    |    | 103   | 121   | 224   | 23:15          |        |       | 24     | 12    | 36    |     |     |      |
| 11:30          |    |    | 111   | 104   | 215   | 23:30          |        |       | 21     | 7     | 28    |     |     |      |
| 11:45          |    |    | 130   | 454   | 115   | 456            | 23:45  |       | 17     | 89    | 5     | 31  | 22  | 120  |
| <b>TOTALS</b>  |    |    | 3281  | 4731  | 8012  | <b>TOTALS</b>  |        |       | 7254   | 3979  | 11233 |     |     |      |
| <b>SPLIT %</b> |    |    | 41.0% | 59.0% | 41.6% | <b>SPLIT %</b> |        |       | 64.6%  | 35.4% | 58.4% |     |     |      |

| DAILY TOTALS |  |  |  |  | NB | SB | EB     | WB    | Total  |
|--------------|--|--|--|--|----|----|--------|-------|--------|
|              |  |  |  |  | 0  | 0  | 10,535 | 8,710 | 19,245 |

|                 |       |       |       |       |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    |       |       | 07:15 | 07:45 | 07:45 | PM Peak Hour    |       |       | 16:00 | 15:30 | 15:30 |
| AM Pk Volume    |       |       | 651   | 977   | 1595  | PM Pk Volume    |       |       | 1098  | 525   | 1617  |
| Pk Hr Factor    |       |       | 0.925 | 0.922 | 0.956 | Pk Hr Factor    |       |       | 0.963 | 0.881 | 0.979 |
| 7 - 9 Volume    | 0     | 0     | 1244  | 1798  | 3042  | 4 - 6 Volume    | 0     | 0     | 2074  | 986   | 3060  |
| 7 - 9 Peak Hour |       |       | 07:15 | 07:45 | 07:45 | 4 - 6 Peak Hour |       |       | 16:00 | 17:00 | 16:00 |
| 7 - 9 Pk Volume | 0     | 0     | 651   | 977   | 1595  | 4 - 6 Pk Volume | 0     | 0     | 1098  | 512   | 1572  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.925 | 0.922 | 0.956 | Pk Hr Factor    | 0.000 | 0.000 | 0.963 | 0.928 | 0.959 |

**VOLUME**

Carbon Canyon Rd E/O Santa Fe Rd

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1232\_006

| DAILY TOTALS   |    |    |       |       | NB     | SB             |       |    |       |       |       | Total  |      |  |  |
|----------------|----|----|-------|-------|--------|----------------|-------|----|-------|-------|-------|--------|------|--|--|
|                |    |    |       |       | 0      | 0              |       |    |       |       |       | 20,106 |      |  |  |
|                |    |    |       |       | 10,225 |                |       |    |       | 9,881 |       |        |      |  |  |
| AM Period      | NB | SB | EB    | WB    | TOTAL  | PM Period      | NB    | SB | EB    | WB    | TOTAL |        |      |  |  |
| 00:00          |    |    | 18    | 3     | 21     | 12:00          |       |    | 92    | 66    | 158   |        |      |  |  |
| 00:15          |    |    | 19    | 5     | 24     | 12:15          |       |    | 87    | 88    | 175   |        |      |  |  |
| 00:30          |    |    | 12    | 1     | 13     | 12:30          |       |    | 92    | 91    | 183   |        |      |  |  |
| 00:45          |    |    | 6     | 55    | 6      | 15             | 12:45 |    | 92    | 363   | 81    | 326    | 689  |  |  |
| 01:00          |    |    | 13    | 3     | 16     | 13:00          |       |    | 129   | 74    | 203   |        |      |  |  |
| 01:15          |    |    | 4     | 4     | 8      | 13:15          |       |    | 109   | 75    | 184   |        |      |  |  |
| 01:30          |    |    | 11    | 2     | 13     | 13:30          |       |    | 124   | 69    | 193   |        |      |  |  |
| 01:45          |    |    | 7     | 35    | 0      | 9              | 13:45 |    | 125   | 487   | 94    | 312    | 799  |  |  |
| 02:00          |    |    | 1     | 1     | 2      | 14:00          |       |    | 171   | 97    | 268   |        |      |  |  |
| 02:15          |    |    | 4     | 4     | 8      | 14:15          |       |    | 236   | 64    | 300   |        |      |  |  |
| 02:30          |    |    | 7     | 4     | 11     | 14:30          |       |    | 327   | 68    | 395   |        |      |  |  |
| 02:45          |    |    | 1     | 13    | 8      | 17             | 14:45 |    | 339   | 1073  | 73    | 302    | 1375 |  |  |
| 03:00          |    |    | 7     | 6     | 13     | 15:00          |       |    | 323   | 68    | 391   |        |      |  |  |
| 03:15          |    |    | 4     | 6     | 10     | 15:15          |       |    | 315   | 82    | 397   |        |      |  |  |
| 03:30          |    |    | 2     | 13    | 15     | 15:30          |       |    | 408   | 71    | 479   |        |      |  |  |
| 03:45          |    |    | 3     | 16    | 12     | 37             | 15:45 |    | 366   | 1412  | 70    | 291    | 1703 |  |  |
| 04:00          |    |    | 3     | 14    | 17     | 16:00          |       |    | 309   | 69    | 378   |        |      |  |  |
| 04:15          |    |    | 3     | 32    | 35     | 16:15          |       |    | 306   | 81    | 387   |        |      |  |  |
| 04:30          |    |    | 6     | 55    | 61     | 16:30          |       |    | 315   | 90    | 405   |        |      |  |  |
| 04:45          |    |    | 5     | 17    | 73     | 174            | 16:45 |    | 299   | 1229  | 99    | 339    | 1568 |  |  |
| 05:00          |    |    | 5     | 107   | 112    | 17:00          |       |    | 322   | 64    | 386   |        |      |  |  |
| 05:15          |    |    | 18    | 222   | 240    | 17:15          |       |    | 381   | 65    | 446   |        |      |  |  |
| 05:30          |    |    | 19    | 277   | 296    | 17:30          |       |    | 359   | 81    | 440   |        |      |  |  |
| 05:45          |    |    | 20    | 62    | 362    | 968            | 17:45 |    | 344   | 1406  | 81    | 291    | 1697 |  |  |
| 06:00          |    |    | 16    | 330   | 346    | 18:00          |       |    | 251   | 62    | 313   |        |      |  |  |
| 06:15          |    |    | 39    | 352   | 391    | 18:15          |       |    | 266   | 67    | 333   |        |      |  |  |
| 06:30          |    |    | 41    | 360   | 401    | 18:30          |       |    | 259   | 49    | 308   |        |      |  |  |
| 06:45          |    |    | 60    | 156   | 354    | 1396           | 18:45 |    | 205   | 981   | 39    | 217    | 1198 |  |  |
| 07:00          |    |    | 46    | 365   | 411    | 19:00          |       |    | 256   | 41    | 297   |        |      |  |  |
| 07:15          |    |    | 45    | 363   | 408    | 19:15          |       |    | 211   | 27    | 238   |        |      |  |  |
| 07:30          |    |    | 56    | 366   | 422    | 19:30          |       |    | 175   | 31    | 206   |        |      |  |  |
| 07:45          |    |    | 72    | 219   | 362    | 1456           | 19:45 |    | 107   | 749   | 23    | 122    | 871  |  |  |
| 08:00          |    |    | 77    | 375   | 452    | 20:00          |       |    | 113   | 18    | 131   |        |      |  |  |
| 08:15          |    |    | 84    | 380   | 464    | 20:15          |       |    | 114   | 23    | 137   |        |      |  |  |
| 08:30          |    |    | 58    | 374   | 432    | 20:30          |       |    | 74    | 20    | 94    |        |      |  |  |
| 08:45          |    |    | 53    | 272   | 373    | 1502           | 20:45 |    | 91    | 392   | 23    | 84     | 476  |  |  |
| 09:00          |    |    | 65    | 251   | 316    | 21:00          |       |    | 68    | 28    | 96    |        |      |  |  |
| 09:15          |    |    | 64    | 262   | 326    | 21:15          |       |    | 89    | 14    | 103   |        |      |  |  |
| 09:30          |    |    | 50    | 238   | 288    | 21:30          |       |    | 66    | 16    | 82    |        |      |  |  |
| 09:45          |    |    | 60    | 239   | 199    | 950            | 21:45 |    | 38    | 261   | 13    | 71     | 332  |  |  |
| 10:00          |    |    | 58    | 165   | 223    | 22:00          |       |    | 43    | 10    | 53    |        |      |  |  |
| 10:15          |    |    | 56    | 123   | 179    | 22:15          |       |    | 36    | 13    | 49    |        |      |  |  |
| 10:30          |    |    | 60    | 130   | 190    | 22:30          |       |    | 45    | 10    | 55    |        |      |  |  |
| 10:45          |    |    | 60    | 234   | 126    | 544            | 22:45 |    | 25    | 149   | 8     | 41     | 190  |  |  |
| 11:00          |    |    | 89    | 91    | 180    | 23:00          |       |    | 23    | 4     | 27    |        |      |  |  |
| 11:15          |    |    | 91    | 106   | 197    | 23:15          |       |    | 23    | 5     | 28    |        |      |  |  |
| 11:30          |    |    | 66    | 95    | 161    | 23:30          |       |    | 16    | 6     | 22    |        |      |  |  |
| 11:45          |    |    | 82    | 328   | 103    | 395            | 23:45 |    | 15    | 77    | 7     | 22     | 99   |  |  |
| <b>TOTALS</b>  |    |    | 1646  | 7463  | 9109   | <b>TOTALS</b>  |       |    | 8579  | 2418  | 10997 |        |      |  |  |
| <b>SPLIT %</b> |    |    | 18.1% | 81.9% | 45.3%  | <b>SPLIT %</b> |       |    | 78.0% | 22.0% | 54.7% |        |      |  |  |

| DAILY TOTALS |  |  |  |  | NB     | SB |  |  |  |       |  | Total  |  |  |  |
|--------------|--|--|--|--|--------|----|--|--|--|-------|--|--------|--|--|--|
|              |  |  |  |  | 0      | 0  |  |  |  |       |  | 20,106 |  |  |  |
|              |  |  |  |  | 10,225 |    |  |  |  | 9,881 |  |        |  |  |  |

|                 |       |       |       |                 |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-----------------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    | 11:45 | 08:00 | 07:45 | PM Peak Hour    | 15:00 | 16:00           | 15:00 |       |       |       |       |
| AM Pk Volume    | 353   | 1502  | 1782  | PM Pk Volume    | 1412  | 339             | 1703  |       |       |       |       |
| Pk Hr Factor    | 0.959 | 0.988 | 0.960 | Pk Hr Factor    | 0.865 | 0.856           | 0.889 |       |       |       |       |
| 7 - 9 Volume    | 0     | 0     | 491   | 2958            | 3449  | 4 - 6 Volume    | 0     | 0     | 2635  | 630   | 3265  |
| 7 - 9 Peak Hour | 07:45 | 08:00 | 07:45 | 4 - 6 Peak Hour | 17:00 | 16:00           | 17:00 |       |       |       |       |
| 7 - 9 Pk Volume | 0     | 0     | 291   | 1502            | 1782  | 4 - 6 Pk Volume | 0     | 0     | 1406  | 339   | 1697  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.866 | 0.988           | 0.960 | Pk Hr Factor    | 0.000 | 0.000 | 0.923 | 0.856 | 0.951 |

**VOLUME**

Kraemer Blvd Bet. Lambert Rd &amp; Birch St

Day: Tuesday  
Date: 3/27/2018City: Brea  
Project #: CA18\_1059\_006

| DAILY TOTALS   |       |       |     |      | NB    | SB             | EB    | WB    | Total  |     |       |
|----------------|-------|-------|-----|------|-------|----------------|-------|-------|--------|-----|-------|
|                |       |       |     |      | 7,290 | 9,280          | 0     | 0     | 16,570 |     |       |
| AM Period      | NB    | SB    | EB  | WB   | TOTAL | PM Period      | NB    | SB    | EB     | WB  | TOTAL |
| 00:00          | 5     | 2     |     |      | 7     | 12:00          | 103   | 108   |        |     | 211   |
| 00:15          | 5     | 3     |     |      | 8     | 12:15          | 100   | 117   |        |     | 217   |
| 00:30          | 6     | 2     |     |      | 8     | 12:30          | 92    | 110   |        |     | 202   |
| 00:45          | 5     | 21    | 4   | 11   | 9     | 12:45          | 97    | 392   | 109    | 444 | 206   |
| 01:00          | 2     | 4     |     |      | 6     | 13:00          | 91    | 123   |        |     | 214   |
| 01:15          | 2     | 0     |     |      | 2     | 13:15          | 70    | 108   |        |     | 178   |
| 01:30          | 3     | 3     |     |      | 6     | 13:30          | 123   | 122   |        |     | 245   |
| 01:45          | 2     | 9     | 3   | 10   | 5     | 13:45          | 110   | 394   | 129    | 482 | 239   |
| 02:00          | 2     | 4     |     |      | 6     | 14:00          | 97    | 120   |        |     | 217   |
| 02:15          | 4     | 2     |     |      | 6     | 14:15          | 142   | 113   |        |     | 255   |
| 02:30          | 0     | 0     |     |      | 0     | 14:30          | 153   | 120   |        |     | 273   |
| 02:45          | 2     | 8     | 5   | 11   | 7     | 14:45          | 128   | 520   | 138    | 491 | 266   |
| 03:00          | 0     | 5     |     |      | 5     | 15:00          | 125   | 122   |        |     | 247   |
| 03:15          | 2     | 1     |     |      | 3     | 15:15          | 154   | 123   |        |     | 277   |
| 03:30          | 5     | 7     |     |      | 12    | 15:30          | 179   | 117   |        |     | 296   |
| 03:45          | 2     | 9     | 10  | 23   | 12    | 15:45          | 195   | 653   | 159    | 521 | 354   |
| 04:00          | 4     | 15    |     |      | 19    | 16:00          | 182   | 113   |        |     | 295   |
| 04:15          | 3     | 8     |     |      | 11    | 16:15          | 192   | 142   |        |     | 334   |
| 04:30          | 6     | 35    |     |      | 41    | 16:30          | 202   | 118   |        |     | 320   |
| 04:45          | 18    | 31    | 52  | 110  | 70    | 16:45          | 236   | 812   | 173    | 546 | 409   |
| 05:00          | 13    | 28    |     |      | 41    | 17:00          | 219   | 166   |        |     | 385   |
| 05:15          | 10    | 51    |     |      | 61    | 17:15          | 223   | 206   |        |     | 429   |
| 05:30          | 17    | 98    |     |      | 115   | 17:30          | 204   | 166   |        |     | 370   |
| 05:45          | 15    | 55    | 145 | 322  | 160   | 17:45          | 182   | 828   | 152    | 690 | 334   |
| 06:00          | 18    | 118   |     |      | 136   | 18:00          | 164   | 117   |        |     | 281   |
| 06:15          | 32    | 161   |     |      | 193   | 18:15          | 186   | 117   |        |     | 303   |
| 06:30          | 30    | 234   |     |      | 264   | 18:30          | 150   | 114   |        |     | 264   |
| 06:45          | 63    | 143   | 241 | 754  | 304   | 18:45          | 130   | 630   | 98     | 446 | 228   |
| 07:00          | 59    | 302   |     |      | 361   | 19:00          | 137   | 102   |        |     | 239   |
| 07:15          | 62    | 257   |     |      | 319   | 19:15          | 122   | 66    |        |     | 188   |
| 07:30          | 69    | 302   |     |      | 371   | 19:30          | 106   | 68    |        |     | 174   |
| 07:45          | 117   | 307   | 266 | 1127 | 383   | 19:45          | 111   | 476   | 81     | 317 | 192   |
| 08:00          | 95    | 234   |     |      | 329   | 20:00          | 88    | 57    |        |     | 145   |
| 08:15          | 86    | 236   |     |      | 322   | 20:15          | 105   | 59    |        |     | 164   |
| 08:30          | 78    | 205   |     |      | 283   | 20:30          | 60    | 50    |        |     | 110   |
| 08:45          | 83    | 342   | 202 | 877  | 285   | 20:45          | 77    | 330   | 46     | 212 | 123   |
| 09:00          | 78    | 182   |     |      | 260   | 21:00          | 51    | 42    |        |     | 93    |
| 09:15          | 74    | 150   |     |      | 224   | 21:15          | 84    | 44    |        |     | 128   |
| 09:30          | 66    | 119   |     |      | 185   | 21:30          | 44    | 33    |        |     | 77    |
| 09:45          | 68    | 286   | 135 | 586  | 203   | 21:45          | 50    | 229   | 34     | 153 | 84    |
| 10:00          | 80    | 105   |     |      | 185   | 22:00          | 28    | 21    |        |     | 49    |
| 10:15          | 86    | 120   |     |      | 206   | 22:15          | 20    | 17    |        |     | 37    |
| 10:30          | 65    | 128   |     |      | 193   | 22:30          | 29    | 14    |        |     | 43    |
| 10:45          | 99    | 330   | 137 | 490  | 236   | 22:45          | 14    | 91    | 12     | 64  | 26    |
| 11:00          | 92    | 125   |     |      | 217   | 23:00          | 19    | 10    |        |     | 29    |
| 11:15          | 75    | 143   |     |      | 218   | 23:15          | 9     | 10    |        |     | 19    |
| 11:30          | 100   | 138   |     |      | 238   | 23:30          | 12    | 9     |        |     | 21    |
| 11:45          | 77    | 344   | 151 | 557  | 228   | 23:45          | 10    | 50    | 7      | 36  | 17    |
| <b>TOTALS</b>  | 1885  | 4878  |     |      | 6763  | <b>TOTALS</b>  | 5405  | 4402  |        |     | 9807  |
| <b>SPLIT %</b> | 27.9% | 72.1% |     |      | 40.8% | <b>SPLIT %</b> | 55.1% | 44.9% |        |     | 59.2% |

| DAILY TOTALS |  |  |  |  | NB    | SB    | EB | WB | Total  |
|--------------|--|--|--|--|-------|-------|----|----|--------|
|              |  |  |  |  | 7,290 | 9,280 | 0  | 0  | 16,570 |

|                 |       |       |       |       |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    | 11:30 | 07:00 |       |       | 07:00 | PM Peak Hour    | 16:45 | 16:45 |       |       | 16:45 |
| AM Pk Volume    | 380   | 1127  |       |       | 1434  | PM Pk Volume    | 882   | 711   |       |       | 1593  |
| Pk Hr Factor    | 0.922 | 0.933 |       |       | 0.936 | Pk Hr Factor    | 0.934 | 0.863 |       |       | 0.928 |
| 7 - 9 Volume    | 649   | 2004  | 0     | 0     | 2653  | 4 - 6 Volume    | 1640  | 1236  | 0     | 0     | 2876  |
| 7 - 9 Peak Hour | 07:45 | 07:00 |       |       | 07:00 | 4 - 6 Peak Hour | 16:45 | 16:45 |       |       | 16:45 |
| 7 - 9 Pk Volume | 376   | 1127  | 0     | 0     | 1434  | 4 - 6 Pk Volume | 882   | 711   | 0     | 0     | 1593  |
| Pk Hr Factor    | 0.803 | 0.933 | 0.000 | 0.000 | 0.936 | Pk Hr Factor    | 0.934 | 0.863 | 0.000 | 0.000 | 0.928 |



**VOLUME**

Valencia Ave Bet. Lambert Rd &amp; Birch St

Day: Tuesday  
Date: 3/27/2018City: Brea  
Project #: CA18\_1059\_001

| DAILY TOTALS   |              |              |     |      | NB           | SB             | EB           | WB           | Total  |     |              |
|----------------|--------------|--------------|-----|------|--------------|----------------|--------------|--------------|--------|-----|--------------|
|                |              |              |     |      | 12,160       | 12,600         | 0            | 0            | 24,760 |     |              |
| AM Period      | NB           | SB           | EB  | WB   | TOTAL        | PM Period      | NB           | SB           | EB     | WB  | TOTAL        |
| 00:00          | 11           | 11           |     |      | 22           | 12:00          | 154          | 185          |        |     | 339          |
| 00:15          | 4            | 9            |     |      | 13           | 12:15          | 196          | 163          |        |     | 359          |
| 00:30          | 10           | 4            |     |      | 14           | 12:30          | 163          | 137          |        |     | 300          |
| 00:45          | 1            | 26           | 6   | 30   | 7            | 12:45          | 167          | 680          | 165    | 650 | 332          |
| 01:00          | 3            | 2            |     |      | 5            | 13:00          | 175          | 109          |        |     | 284          |
| 01:15          | 6            | 6            |     |      | 12           | 13:15          | 164          | 137          |        |     | 301          |
| 01:30          | 2            | 4            |     |      | 6            | 13:30          | 174          | 157          |        |     | 331          |
| 01:45          | 4            | 15           | 4   | 16   | 8            | 13:45          | 184          | 697          | 163    | 566 | 347          |
| 02:00          | 0            | 3            |     |      | 3            | 14:00          | 202          | 179          |        |     | 381          |
| 02:15          | 0            | 1            |     |      | 1            | 14:15          | 283          | 158          |        |     | 441          |
| 02:30          | 3            | 2            |     |      | 5            | 14:30          | 285          | 170          |        |     | 455          |
| 02:45          | 4            | 7            | 2   | 8    | 6            | 14:45          | 317          | 1087         | 157    | 664 | 474          |
| 03:00          | 6            | 0            |     |      | 6            | 15:00          | 261          | 194          |        |     | 455          |
| 03:15          | 5            | 7            |     |      | 12           | 15:15          | 307          | 177          |        |     | 484          |
| 03:30          | 6            | 3            |     |      | 9            | 15:30          | 385          | 165          |        |     | 550          |
| 03:45          | 4            | 21           | 9   | 19   | 13           | 15:45          | 328          | 1281         | 143    | 679 | 471          |
| 04:00          | 9            | 6            |     |      | 15           | 16:00          | 325          | 177          |        |     | 502          |
| 04:15          | 7            | 19           |     |      | 26           | 16:15          | 313          | 177          |        |     | 490          |
| 04:30          | 8            | 28           |     |      | 36           | 16:30          | 314          | 143          |        |     | 457          |
| 04:45          | 11           | 35           | 44  | 97   | 55           | 16:45          | 331          | 1283         | 172    | 669 | 503          |
| 05:00          | 18           | 55           |     |      | 73           | 17:00          | 350          | 163          |        |     | 513          |
| 05:15          | 14           | 85           |     |      | 99           | 17:15          | 315          | 158          |        |     | 473          |
| 05:30          | 22           | 167          |     |      | 189          | 17:30          | 249          | 138          |        |     | 387          |
| 05:45          | 27           | 81           | 256 | 563  | 283          | 17:45          | 251          | 1165         | 162    | 621 | 413          |
| 06:00          | 174          | 270          |     |      | 444          | 18:00          | 262          | 123          |        |     | 385          |
| 06:15          | 51           | 277          |     |      | 328          | 18:15          | 264          | 100          |        |     | 364          |
| 06:30          | 74           | 415          |     |      | 489          | 18:30          | 214          | 132          |        |     | 346          |
| 06:45          | 96           | 395          | 435 | 1397 | 531          | 18:45          | 206          | 946          | 98     | 453 | 304          |
| 07:00          | 83           | 398          |     |      | 481          | 19:00          | 155          | 77           |        |     | 232          |
| 07:15          | 104          | 413          |     |      | 517          | 19:15          | 163          | 70           |        |     | 233          |
| 07:30          | 112          | 476          |     |      | 588          | 19:30          | 148          | 62           |        |     | 210          |
| 07:45          | 142          | 441          | 455 | 1742 | 597          | 19:45          | 110          | 576          | 58     | 267 | 168          |
| 08:00          | 164          | 319          |     |      | 483          | 20:00          | 155          | 50           |        |     | 205          |
| 08:15          | 165          | 358          |     |      | 523          | 20:15          | 138          | 51           |        |     | 189          |
| 08:30          | 155          | 350          |     |      | 505          | 20:30          | 115          | 50           |        |     | 165          |
| 08:45          | 148          | 632          | 320 | 1347 | 468          | 20:45          | 110          | 518          | 46     | 197 | 156          |
| 09:00          | 153          | 211          |     |      | 364          | 21:00          | 73           | 54           |        |     | 127          |
| 09:15          | 167          | 236          |     |      | 403          | 21:15          | 68           | 46           |        |     | 114          |
| 09:30          | 144          | 225          |     |      | 369          | 21:30          | 51           | 50           |        |     | 101          |
| 09:45          | 134          | 598          | 198 | 870  | 332          | 21:45          | 46           | 238          | 30     | 180 | 76           |
| 10:00          | 145          | 172          |     |      | 317          | 22:00          | 57           | 29           |        |     | 86           |
| 10:15          | 149          | 191          |     |      | 340          | 22:15          | 33           | 22           |        |     | 55           |
| 10:30          | 143          | 165          |     |      | 308          | 22:30          | 36           | 14           |        |     | 50           |
| 10:45          | 143          | 580          | 190 | 718  | 333          | 22:45          | 19           | 145          | 22     | 87  | 41           |
| 11:00          | 162          | 177          |     |      | 339          | 23:00          | 20           | 13           |        |     | 33           |
| 11:15          | 178          | 171          |     |      | 349          | 23:15          | 20           | 16           |        |     | 36           |
| 11:30          | 166          | 166          |     |      | 332          | 23:30          | 11           | 10           |        |     | 21           |
| 11:45          | 141          | 647          | 196 | 710  | 337          | 23:45          | 15           | 66           | 11     | 50  | 26           |
| <b>TOTALS</b>  | <b>3478</b>  | <b>7517</b>  |     |      | <b>10995</b> | <b>TOTALS</b>  | <b>8682</b>  | <b>5083</b>  |        |     | <b>13765</b> |
| <b>SPLIT %</b> | <b>31.6%</b> | <b>68.4%</b> |     |      | <b>44.4%</b> | <b>SPLIT %</b> | <b>63.1%</b> | <b>36.9%</b> |        |     | <b>55.6%</b> |

| DAILY TOTALS |  |  |  |  | NB     | SB     | EB | WB | Total  |
|--------------|--|--|--|--|--------|--------|----|----|--------|
|              |  |  |  |  | 12,160 | 12,600 | 0  | 0  | 24,760 |

|                 |       |       |       |       |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    | 11:30 | 07:00 |       |       | 07:30 | PM Peak Hour    | 15:30 | 14:30 |       |       | 15:30 |
| AM Pk Volume    | 657   | 1742  |       |       | 2191  | PM Pk Volume    | 1351  | 698   |       |       | 2013  |
| Pk Hr Factor    | 0.838 | 0.915 |       |       | 0.918 | Pk Hr Factor    | 0.877 | 0.899 |       |       | 0.915 |
| 7 - 9 Volume    | 1073  | 3089  | 0     | 0     | 4162  | 4 - 6 Volume    | 2448  | 1290  | 0     | 0     | 3738  |
| 7 - 9 Peak Hour | 08:00 | 07:00 |       |       | 07:30 | 4 - 6 Peak Hour | 16:30 | 16:00 |       |       | 16:15 |
| 7 - 9 Pk Volume | 632   | 1742  | 0     | 0     | 2191  | 4 - 6 Pk Volume | 1310  | 669   | 0     | 0     | 1963  |
| Pk Hr Factor    | 0.958 | 0.915 | 0.000 | 0.000 | 0.918 | Pk Hr Factor    | 0.936 | 0.945 | 0.000 | 0.000 | 0.957 |

**VOLUME**

Birch St E/O State College Blvd

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1232\_007

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB     | WB     | Total  |       |       |      |
|----------------|----|----|-------|-------|-------|----------------|--------|--------|--------|-------|-------|------|
|                |    |    |       |       | 0     | 0              | 12,499 | 11,971 | 24,470 |       |       |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB     | SB     | EB     | WB    | TOTAL |      |
| 00:00          |    |    | 14    | 7     | 21    | 12:00          |        |        | 220    | 192   | 412   |      |
| 00:15          |    |    | 6     | 10    | 16    | 12:15          |        |        | 205    | 191   | 396   |      |
| 00:30          |    |    | 8     | 2     | 10    | 12:30          |        |        | 199    | 182   | 381   |      |
| 00:45          |    |    | 4     | 32    | 10    | 12:45          |        |        | 230    | 854   | 215   | 780  |
| 01:00          |    |    | 4     | 2     | 6     | 13:00          |        |        | 193    | 179   | 372   |      |
| 01:15          |    |    | 10    | 2     | 12    | 13:15          |        |        | 199    | 164   | 363   |      |
| 01:30          |    |    | 2     | 2     | 4     | 13:30          |        |        | 219    | 166   | 385   |      |
| 01:45          |    |    | 5     | 21    | 6     | 13:45          |        |        | 242    | 853   | 177   | 686  |
| 02:00          |    |    | 1     | 3     | 4     | 14:00          |        |        | 255    | 159   | 414   |      |
| 02:15          |    |    | 1     | 4     | 5     | 14:15          |        |        | 231    | 190   | 421   |      |
| 02:30          |    |    | 1     | 0     | 1     | 14:30          |        |        | 246    | 214   | 460   |      |
| 02:45          |    |    | 2     | 5     | 3     | 14:45          |        |        | 246    | 978   | 268   | 831  |
| 03:00          |    |    | 1     | 2     | 3     | 15:00          |        |        | 303    | 247   | 550   |      |
| 03:15          |    |    | 1     | 7     | 8     | 15:15          |        |        | 314    | 230   | 544   |      |
| 03:30          |    |    | 2     | 8     | 10    | 15:30          |        |        | 252    | 243   | 495   |      |
| 03:45          |    |    | 4     | 8     | 17    | 15:45          |        |        | 228    | 1097  | 282   | 1002 |
| 04:00          |    |    | 3     | 8     | 11    | 16:00          |        |        | 225    | 271   | 496   |      |
| 04:15          |    |    | 8     | 18    | 26    | 16:15          |        |        | 272    | 277   | 549   |      |
| 04:30          |    |    | 18    | 11    | 29    | 16:30          |        |        | 250    | 358   | 608   |      |
| 04:45          |    |    | 22    | 51    | 46    | 16:45          |        |        | 275    | 1022  | 400   | 1306 |
| 05:00          |    |    | 11    | 18    | 29    | 17:00          |        |        | 266    | 384   | 650   |      |
| 05:15          |    |    | 25    | 24    | 49    | 17:15          |        |        | 295    | 388   | 683   |      |
| 05:30          |    |    | 29    | 34    | 63    | 17:30          |        |        | 272    | 360   | 632   |      |
| 05:45          |    |    | 77    | 142   | 135   | 17:45          |        |        | 244    | 1077  | 300   | 1432 |
| 06:00          |    |    | 62    | 29    | 91    | 18:00          |        |        | 244    | 263   | 507   |      |
| 06:15          |    |    | 101   | 70    | 171   | 18:15          |        |        | 245    | 217   | 462   |      |
| 06:30          |    |    | 171   | 92    | 263   | 18:30          |        |        | 194    | 213   | 407   |      |
| 06:45          |    |    | 226   | 560   | 320   | 18:45          |        |        | 216    | 899   | 174   | 867  |
| 07:00          |    |    | 211   | 128   | 339   | 19:00          |        |        | 163    | 133   | 296   |      |
| 07:15          |    |    | 228   | 145   | 373   | 19:15          |        |        | 151    | 135   | 286   |      |
| 07:30          |    |    | 308   | 190   | 498   | 19:30          |        |        | 136    | 98    | 234   |      |
| 07:45          |    |    | 318   | 1065  | 596   | 19:45          |        |        | 115    | 565   | 103   | 469  |
| 08:00          |    |    | 285   | 246   | 531   | 20:00          |        |        | 116    | 76    | 192   |      |
| 08:15          |    |    | 187   | 220   | 407   | 20:15          |        |        | 114    | 83    | 197   |      |
| 08:30          |    |    | 143   | 185   | 328   | 20:30          |        |        | 125    | 74    | 199   |      |
| 08:45          |    |    | 159   | 774   | 353   | 20:45          |        |        | 115    | 470   | 76    | 309  |
| 09:00          |    |    | 146   | 156   | 302   | 21:00          |        |        | 73     | 51    | 124   |      |
| 09:15          |    |    | 103   | 138   | 241   | 21:15          |        |        | 68     | 25    | 93    |      |
| 09:30          |    |    | 112   | 131   | 243   | 21:30          |        |        | 58     | 26    | 84    |      |
| 09:45          |    |    | 110   | 471   | 288   | 21:45          |        |        | 47     | 246   | 28    | 130  |
| 10:00          |    |    | 110   | 158   | 268   | 22:00          |        |        | 52     | 33    | 85    |      |
| 10:15          |    |    | 119   | 121   | 240   | 22:15          |        |        | 34     | 25    | 59    |      |
| 10:30          |    |    | 140   | 156   | 296   | 22:30          |        |        | 36     | 19    | 55    |      |
| 10:45          |    |    | 134   | 503   | 272   | 22:45          |        |        | 17     | 139   | 12    | 89   |
| 11:00          |    |    | 150   | 152   | 302   | 23:00          |        |        | 25     | 15    | 40    |      |
| 11:15          |    |    | 144   | 167   | 311   | 23:15          |        |        | 18     | 10    | 28    |      |
| 11:30          |    |    | 158   | 200   | 358   | 23:30          |        |        | 8      | 7     | 15    |      |
| 11:45          |    |    | 154   | 606   | 353   | 23:45          |        |        | 10     | 61    | 8     | 40   |
| <b>TOTALS</b>  |    |    | 4238  | 4030  | 8268  | <b>TOTALS</b>  |        |        | 8261   | 7941  | 16202 |      |
| <b>SPLIT %</b> |    |    | 51.3% | 48.7% | 33.8% | <b>SPLIT %</b> |        |        | 51.0%  | 49.0% | 66.2% |      |

| DAILY TOTALS    |       |       |       |       | NB    | SB              | EB     | WB     | Total  |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|--------|--------|--------|-------|-------|
|                 |       |       |       |       | 0     | 0               | 12,499 | 11,971 | 24,470 |       |       |
| AM Peak Hour    |       |       | 07:15 | 07:30 | 07:30 | PM Peak Hour    |        |        | 14:45  | 16:45 | 16:45 |
| AM Pk Volume    |       |       | 1139  | 934   | 2032  | PM Pk Volume    |        |        | 1115   | 1532  | 2640  |
| Pk Hr Factor    |       |       | 0.895 | 0.840 | 0.852 | Pk Hr Factor    |        |        | 0.888  | 0.958 | 0.966 |
| 7 - 9 Volume    | 0     | 0     | 1839  | 1586  | 3425  | 4 - 6 Volume    | 0      | 0      | 2099   | 2738  | 4837  |
| 7 - 9 Peak Hour |       |       | 07:15 | 07:30 | 07:30 | 4 - 6 Peak Hour |        |        | 16:45  | 16:45 | 16:45 |
| 7 - 9 Pk Volume | 0     | 0     | 1139  | 934   | 2032  | 4 - 6 Pk Volume | 0      | 0      | 1108   | 1532  | 2640  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.895 | 0.840 | 0.852 | Pk Hr Factor    | 0.000  | 0.000  | 0.939  | 0.958 | 0.966 |

**VOLUME**

Birch St E/O S Associated Rd

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1232\_008

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB     | WB     | Total  |       |       |      |
|----------------|----|----|-------|-------|-------|----------------|--------|--------|--------|-------|-------|------|
|                |    |    |       |       | 0     | 0              | 12,383 | 11,595 | 23,978 |       |       |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB     | SB     | EB     | WB    | TOTAL |      |
| 00:00          |    |    | 13    | 6     | 19    | 12:00          |        |        | 201    | 199   | 400   |      |
| 00:15          |    |    | 10    | 10    | 20    | 12:15          |        |        | 187    | 185   | 372   |      |
| 00:30          |    |    | 6     | 1     | 7     | 12:30          |        |        | 175    | 147   | 322   |      |
| 00:45          |    |    | 3     | 32    | 3     | 12:45          |        |        | 215    | 778   | 177   | 708  |
| 01:00          |    |    | 6     | 4     | 10    | 13:00          |        |        | 163    | 161   | 324   |      |
| 01:15          |    |    | 4     | 3     | 7     | 13:15          |        |        | 215    | 145   | 360   |      |
| 01:30          |    |    | 2     | 4     | 6     | 13:30          |        |        | 205    | 180   | 385   |      |
| 01:45          |    |    | 5     | 17    | 2     | 13:45          |        |        | 242    | 825   | 160   | 646  |
| 02:00          |    |    | 0     | 2     | 2     | 14:00          |        |        | 248    | 153   | 401   |      |
| 02:15          |    |    | 3     | 2     | 5     | 14:15          |        |        | 239    | 166   | 405   |      |
| 02:30          |    |    | 2     | 1     | 3     | 14:30          |        |        | 278    | 206   | 484   |      |
| 02:45          |    |    | 6     | 11    | 1     | 14:45          |        |        | 256    | 1021  | 307   | 832  |
| 03:00          |    |    | 6     | 4     | 10    | 15:00          |        |        | 310    | 233   | 543   |      |
| 03:15          |    |    | 1     | 9     | 10    | 15:15          |        |        | 280    | 185   | 465   |      |
| 03:30          |    |    | 4     | 15    | 19    | 15:30          |        |        | 242    | 266   | 508   |      |
| 03:45          |    |    | 5     | 16    | 10    | 15:45          |        |        | 237    | 1069  | 248   | 932  |
| 04:00          |    |    | 2     | 7     | 9     | 16:00          |        |        | 218    | 268   | 486   |      |
| 04:15          |    |    | 16    | 13    | 29    | 16:15          |        |        | 254    | 264   | 518   |      |
| 04:30          |    |    | 32    | 18    | 50    | 16:30          |        |        | 265    | 320   | 585   |      |
| 04:45          |    |    | 31    | 81    | 24    | 16:45          |        |        | 265    | 1002  | 324   | 1176 |
| 05:00          |    |    | 18    | 20    | 38    | 17:00          |        |        | 269    | 365   | 634   |      |
| 05:15          |    |    | 29    | 26    | 55    | 17:15          |        |        | 294    | 368   | 662   |      |
| 05:30          |    |    | 31    | 47    | 78    | 17:30          |        |        | 284    | 344   | 628   |      |
| 05:45          |    |    | 92    | 170   | 64    | 17:45          |        |        | 263    | 1110  | 278   | 1355 |
| 06:00          |    |    | 75    | 49    | 124   | 18:00          |        |        | 235    | 224   | 459   |      |
| 06:15          |    |    | 97    | 97    | 194   | 18:15          |        |        | 242    | 193   | 435   |      |
| 06:30          |    |    | 214   | 108   | 322   | 18:30          |        |        | 186    | 193   | 379   |      |
| 06:45          |    |    | 256   | 642   | 147   | 18:45          |        |        | 208    | 871   | 141   | 751  |
| 07:00          |    |    | 202   | 164   | 366   | 19:00          |        |        | 173    | 112   | 285   |      |
| 07:15          |    |    | 215   | 165   | 380   | 19:15          |        |        | 137    | 123   | 260   |      |
| 07:30          |    |    | 282   | 223   | 505   | 19:30          |        |        | 123    | 96    | 219   |      |
| 07:45          |    |    | 335   | 1034  | 296   | 19:45          |        |        | 96     | 529   | 87    | 418  |
| 08:00          |    |    | 292   | 271   | 563   | 20:00          |        |        | 114    | 81    | 195   |      |
| 08:15          |    |    | 275   | 246   | 521   | 20:15          |        |        | 109    | 77    | 186   |      |
| 08:30          |    |    | 148   | 188   | 336   | 20:30          |        |        | 112    | 57    | 169   |      |
| 08:45          |    |    | 147   | 862   | 182   | 20:45          |        |        | 93     | 428   | 65    | 280  |
| 09:00          |    |    | 133   | 157   | 290   | 21:00          |        |        | 75     | 50    | 125   |      |
| 09:15          |    |    | 101   | 126   | 227   | 21:15          |        |        | 68     | 22    | 90    |      |
| 09:30          |    |    | 107   | 134   | 241   | 21:30          |        |        | 48     | 31    | 79    |      |
| 09:45          |    |    | 110   | 451   | 158   | 21:45          |        |        | 54     | 245   | 27    | 130  |
| 10:00          |    |    | 97    | 145   | 242   | 22:00          |        |        | 45     | 23    | 68    |      |
| 10:15          |    |    | 111   | 122   | 233   | 22:15          |        |        | 38     | 32    | 70    |      |
| 10:30          |    |    | 124   | 148   | 272   | 22:30          |        |        | 35     | 22    | 57    |      |
| 10:45          |    |    | 126   | 458   | 142   | 22:45          |        |        | 17     | 135   | 15    | 92   |
| 11:00          |    |    | 133   | 135   | 268   | 23:00          |        |        | 27     | 15    | 42    |      |
| 11:15          |    |    | 125   | 159   | 284   | 23:15          |        |        | 14     | 14    | 28    |      |
| 11:30          |    |    | 123   | 189   | 312   | 23:30          |        |        | 13     | 15    | 28    |      |
| 11:45          |    |    | 154   | 535   | 175   | 23:45          |        |        | 7      | 61    | 9     | 53   |
| <b>TOTALS</b>  |    |    | 4309  | 4222  | 8531  | <b>TOTALS</b>  |        |        | 8074   | 7373  | 15447 |      |
| <b>SPLIT %</b> |    |    | 50.5% | 49.5% | 35.6% | <b>SPLIT %</b> |        |        | 52.3%  | 47.7% | 64.4% |      |

| DAILY TOTALS    |       |       |       |       | NB    | SB              | EB     | WB     | Total  |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|--------|--------|--------|-------|-------|
|                 |       |       |       |       | 0     | 0               | 12,383 | 11,595 | 23,978 |       |       |
| AM Peak Hour    |       |       | 07:30 | 07:30 | 07:30 | PM Peak Hour    |        |        | 14:30  | 16:45 | 16:45 |
| AM Pk Volume    |       |       | 1184  | 1036  | 2220  | PM Pk Volume    |        |        | 1124   | 1401  | 2513  |
| Pk Hr Factor    |       |       | 0.884 | 0.875 | 0.880 | Pk Hr Factor    |        |        | 0.906  | 0.952 | 0.949 |
| 7 - 9 Volume    | 0     | 0     | 1896  | 1735  | 3631  | 4 - 6 Volume    | 0      | 0      | 2112   | 2531  | 4643  |
| 7 - 9 Peak Hour |       |       | 07:30 | 07:30 | 07:30 | 4 - 6 Peak Hour |        |        | 16:45  | 16:45 | 16:45 |
| 7 - 9 Pk Volume | 0     | 0     | 1184  | 1036  | 2220  | 4 - 6 Pk Volume | 0      | 0      | 1112   | 1401  | 2513  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.884 | 0.875 | 0.880 | Pk Hr Factor    | 0.000  | 0.000  | 0.946  | 0.952 | 0.949 |

**VOLUME**

Birch St E/O N Associated Rd

Day: Tuesday  
Date: 11/27/2018

City: Brea  
Project #: CA18\_1232\_009

| DAILY TOTALS   |    |    |       |     | NB     | SB  |                |    |    |       |     | Total  |      |              |      |
|----------------|----|----|-------|-----|--------|-----|----------------|----|----|-------|-----|--------|------|--------------|------|
|                |    |    |       |     | 0      | 0   |                |    |    |       |     | 20,525 |      |              |      |
|                |    |    |       |     | 10,589 |     |                |    |    |       |     | 9,936  |      |              |      |
| AM Period      | NB | SB | EB    | WB  | TOTAL  |     | PM Period      | NB | SB | EB    | WB  | TOTAL  |      |              |      |
| 00:00          |    |    | 2     | 4   | 6      |     | 12:00          |    |    | 168   | 172 | 340    |      |              |      |
| 00:15          |    |    | 6     | 5   | 11     |     | 12:15          |    |    | 163   | 164 | 327    |      |              |      |
| 00:30          |    |    | 5     | 8   | 13     |     | 12:30          |    |    | 185   | 154 | 339    |      |              |      |
| 00:45          |    |    | 6     | 19  | 10     | 27  | 12:45          |    |    | 202   | 718 | 159    | 649  | 361          | 1367 |
| 01:00          |    |    | 4     | 0   | 4      |     | 13:00          |    |    | 181   | 139 | 320    |      |              |      |
| 01:15          |    |    | 2     | 0   | 2      |     | 13:15          |    |    | 196   | 152 | 348    |      |              |      |
| 01:30          |    |    | 3     | 3   | 6      |     | 13:30          |    |    | 177   | 147 | 324    |      |              |      |
| 01:45          |    |    | 1     | 10  | 1      | 4   | 13:45          |    |    | 160   | 714 | 132    | 570  | 292          | 1284 |
| 02:00          |    |    | 0     | 1   | 1      |     | 14:00          |    |    | 175   | 161 | 336    |      |              |      |
| 02:15          |    |    | 1     | 2   | 3      |     | 14:15          |    |    | 160   | 200 | 360    |      |              |      |
| 02:30          |    |    | 2     | 0   | 2      |     | 14:30          |    |    | 163   | 200 | 363    |      |              |      |
| 02:45          |    |    | 4     | 7   | 5      | 8   | 14:45          |    |    | 199   | 697 | 194    | 755  | 393          | 1452 |
| 03:00          |    |    | 2     | 3   | 5      |     | 15:00          |    |    | 200   | 212 | 412    |      |              |      |
| 03:15          |    |    | 0     | 1   | 1      |     | 15:15          |    |    | 209   | 160 | 369    |      |              |      |
| 03:30          |    |    | 4     | 4   | 8      |     | 15:30          |    |    | 195   | 253 | 448    |      |              |      |
| 03:45          |    |    | 3     | 9   | 3      | 11  | 15:45          |    |    | 174   | 778 | 205    | 830  | 379          | 1608 |
| 04:00          |    |    | 5     | 7   | 12     |     | 16:00          |    |    | 203   | 256 | 459    |      |              |      |
| 04:15          |    |    | 13    | 5   | 18     |     | 16:15          |    |    | 215   | 224 | 439    |      |              |      |
| 04:30          |    |    | 29    | 11  | 40     |     | 16:30          |    |    | 201   | 287 | 488    |      |              |      |
| 04:45          |    |    | 45    | 92  | 13     | 36  | 16:45          |    |    | 257   | 876 | 285    | 1052 | 542          | 1928 |
| 05:00          |    |    | 19    | 12  | 31     |     | 17:00          |    |    | 242   | 321 | 563    |      |              |      |
| 05:15          |    |    | 22    | 16  | 38     |     | 17:15          |    |    | 256   | 340 | 596    |      |              |      |
| 05:30          |    |    | 28    | 21  | 49     |     | 17:30          |    |    | 260   | 283 | 543    |      |              |      |
| 05:45          |    |    | 94    | 163 | 56     | 105 | 17:45          |    |    | 237   | 995 | 266    | 1210 | 503          | 2205 |
| 06:00          |    |    | 82    | 37  | 119    |     | 18:00          |    |    | 211   | 232 | 443    |      |              |      |
| 06:15          |    |    | 105   | 51  | 156    |     | 18:15          |    |    | 212   | 235 | 447    |      |              |      |
| 06:30          |    |    | 151   | 86  | 237    |     | 18:30          |    |    | 174   | 198 | 372    |      |              |      |
| 06:45          |    |    | 219   | 557 | 95     | 269 | 18:45          |    |    | 141   | 738 | 133    | 798  | 274          | 1536 |
| 07:00          |    |    | 173   | 84  | 257    |     | 19:00          |    |    | 142   | 119 | 261    |      |              |      |
| 07:15          |    |    | 198   | 128 | 326    |     | 19:15          |    |    | 134   | 87  | 221    |      |              |      |
| 07:30          |    |    | 213   | 136 | 349    |     | 19:30          |    |    | 105   | 99  | 204    |      |              |      |
| 07:45          |    |    | 255   | 839 | 234    | 582 | 19:45          |    |    | 109   | 490 | 52     | 357  | 161          | 847  |
| 08:00          |    |    | 229   | 207 | 436    |     | 20:00          |    |    | 119   | 86  | 205    |      |              |      |
| 08:15          |    |    | 180   | 162 | 342    |     | 20:15          |    |    | 106   | 55  | 161    |      |              |      |
| 08:30          |    |    | 159   | 135 | 294    |     | 20:30          |    |    | 90    | 59  | 149    |      |              |      |
| 08:45          |    |    | 149   | 717 | 145    | 649 | 20:45          |    |    | 75    | 390 | 40     | 240  | 115          | 630  |
| 09:00          |    |    | 132   | 113 | 245    |     | 21:00          |    |    | 82    | 69  | 151    |      |              |      |
| 09:15          |    |    | 99    | 113 | 212    |     | 21:15          |    |    | 70    | 42  | 112    |      |              |      |
| 09:30          |    |    | 94    | 95  | 189    |     | 21:30          |    |    | 50    | 37  | 87     |      |              |      |
| 09:45          |    |    | 126   | 451 | 117    | 438 | 21:45          |    |    | 45    | 247 | 21     | 169  | 66           | 416  |
| 10:00          |    |    | 102   | 107 | 209    |     | 22:00          |    |    | 42    | 29  | 71     |      |              |      |
| 10:15          |    |    | 97    | 123 | 220    |     | 22:15          |    |    | 33    | 18  | 51     |      |              |      |
| 10:30          |    |    | 93    | 65  | 158    |     | 22:30          |    |    | 24    | 11  | 35     |      |              |      |
| 10:45          |    |    | 112   | 404 | 140    | 435 | 22:45          |    |    | 20    | 119 | 13     | 71   | 33           | 190  |
| 11:00          |    |    | 139   | 118 | 257    |     | 23:00          |    |    | 15    | 11  | 26     |      |              |      |
| 11:15          |    |    | 103   | 146 | 249    |     | 23:15          |    |    | 12    | 10  | 22     |      |              |      |
| 11:30          |    |    | 131   | 176 | 307    |     | 23:30          |    |    | 14    | 17  | 31     |      |              |      |
| 11:45          |    |    | 142   | 515 | 179    | 619 | 23:45          |    |    | 3     | 44  | 14     | 52   | 17           | 96   |
| <b>TOTALS</b>  |    |    | 3783  |     | 3183   |     | <b>TOTALS</b>  |    |    | 6806  |     | 6753   |      | <b>13559</b> |      |
| <b>SPLIT %</b> |    |    | 54.3% |     | 45.7%  |     | <b>SPLIT %</b> |    |    | 50.2% |     | 49.8%  |      | <b>66.1%</b> |      |

| DAILY TOTALS    |       |       |       |       | NB     | SB |                 |       |       |       |       | Total  |  |
|-----------------|-------|-------|-------|-------|--------|----|-----------------|-------|-------|-------|-------|--------|--|
|                 |       |       |       |       | 0      | 0  |                 |       |       |       |       | 20,525 |  |
|                 |       |       |       |       | 10,589 |    |                 |       |       |       |       | 9,936  |  |
| AM Peak Hour    |       |       | 07:15 | 07:30 | 07:30  |    | PM Peak Hour    |       |       | 16:45 | 16:30 | 16:45  |  |
| AM Pk Volume    |       |       | 895   | 739   | 1616   |    | PM Pk Volume    |       |       | 1015  | 1233  | 2244   |  |
| Pk Hr Factor    |       |       | 0.877 | 0.790 | 0.826  |    | Pk Hr Factor    |       |       | 0.976 | 0.907 | 0.941  |  |
| 7 - 9 Volume    | 0     | 0     | 1556  | 1231  | 2787   |    | 4 - 6 Volume    | 0     | 0     | 1871  | 2262  | 4133   |  |
| 7 - 9 Peak Hour |       |       | 07:15 | 07:30 | 07:30  |    | 4 - 6 Peak Hour |       |       | 16:45 | 16:30 | 16:45  |  |
| 7 - 9 Pk Volume | 0     | 0     | 895   | 739   | 1616   |    | 4 - 6 Pk Volume | 0     | 0     | 1015  | 1233  | 2244   |  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.877 | 0.790 | 0.826  |    | Pk Hr Factor    | 0.000 | 0.000 | 0.976 | 0.907 | 0.941  |  |

**VOLUME**

Birch St Bet. Kraemer Blvd &amp; Valencia Ave

Day: Tuesday  
Date: 3/27/2018City: Brea  
Project #: CA18\_1059\_008

| DAILY TOTALS   |    |    |       |       | NB    | SB             |       |    |       |       |       | Total  |     |      |
|----------------|----|----|-------|-------|-------|----------------|-------|----|-------|-------|-------|--------|-----|------|
|                |    |    |       |       | 0     | 0              |       |    |       |       |       | 16,499 |     |      |
|                |    |    |       |       |       |                | 8,162 |    |       | 8,337 |       |        |     |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB    | SB | EB    | WB    | TOTAL |        |     |      |
| 00:00          |    |    | 5     | 5     | 10    | 12:00          |       |    | 103   | 130   | 233   |        |     |      |
| 00:15          |    |    | 3     | 3     | 6     | 12:15          |       |    | 94    | 117   | 211   |        |     |      |
| 00:30          |    |    | 4     | 2     | 6     | 12:30          |       |    | 105   | 121   | 226   |        |     |      |
| 00:45          |    |    | 4     | 16    | 5     | 15             | 12:45 |    | 111   | 413   | 128   | 496    | 239 | 909  |
| 01:00          |    |    | 4     | 2     | 6     | 13:00          |       |    | 105   | 107   | 212   |        |     |      |
| 01:15          |    |    | 4     | 0     | 4     | 13:15          |       |    | 101   | 105   | 206   |        |     |      |
| 01:30          |    |    | 2     | 0     | 2     | 13:30          |       |    | 109   | 163   | 272   |        |     |      |
| 01:45          |    |    | 0     | 10    | 0     | 2              | 13:45 |    | 147   | 462   | 130   | 505    | 277 | 967  |
| 02:00          |    |    | 0     | 0     | 0     | 14:00          |       |    | 146   | 137   | 283   |        |     |      |
| 02:15          |    |    | 1     | 1     | 2     | 14:15          |       |    | 136   | 185   | 321   |        |     |      |
| 02:30          |    |    | 0     | 0     | 0     | 14:30          |       |    | 133   | 162   | 295   |        |     |      |
| 02:45          |    |    | 2     | 3     | 1     | 2              | 14:45 |    | 143   | 558   | 155   | 639    | 298 | 1197 |
| 03:00          |    |    | 2     | 4     | 6     | 15:00          |       |    | 163   | 142   | 305   |        |     |      |
| 03:15          |    |    | 3     | 2     | 5     | 15:15          |       |    | 124   | 162   | 286   |        |     |      |
| 03:30          |    |    | 3     | 1     | 4     | 15:30          |       |    | 173   | 197   | 370   |        |     |      |
| 03:45          |    |    | 8     | 16    | 0     | 7              | 15:45 |    | 151   | 611   | 169   | 670    | 320 | 1281 |
| 04:00          |    |    | 2     | 2     | 4     | 16:00          |       |    | 153   | 203   | 356   |        |     |      |
| 04:15          |    |    | 8     | 3     | 11    | 16:15          |       |    | 206   | 202   | 408   |        |     |      |
| 04:30          |    |    | 31    | 10    | 41    | 16:30          |       |    | 200   | 254   | 454   |        |     |      |
| 04:45          |    |    | 35    | 76    | 8     | 23             | 16:45 |    | 189   | 748   | 238   | 897    | 427 | 1645 |
| 05:00          |    |    | 18    | 14    | 32    | 17:00          |       |    | 246   | 251   | 497   |        |     |      |
| 05:15          |    |    | 21    | 14    | 35    | 17:15          |       |    | 219   | 229   | 448   |        |     |      |
| 05:30          |    |    | 40    | 20    | 60    | 17:30          |       |    | 199   | 219   | 418   |        |     |      |
| 05:45          |    |    | 93    | 172   | 28    | 76             | 17:45 |    | 179   | 843   | 194   | 893    | 373 | 1736 |
| 06:00          |    |    | 48    | 35    | 83    | 18:00          |       |    | 151   | 160   | 311   |        |     |      |
| 06:15          |    |    | 65    | 37    | 102   | 18:15          |       |    | 165   | 174   | 339   |        |     |      |
| 06:30          |    |    | 128   | 45    | 173   | 18:30          |       |    | 126   | 136   | 262   |        |     |      |
| 06:45          |    |    | 173   | 414   | 84    | 201            | 18:45 |    | 117   | 559   | 136   | 606    | 253 | 1165 |
| 07:00          |    |    | 134   | 80    | 214   | 19:00          |       |    | 119   | 106   | 225   |        |     |      |
| 07:15          |    |    | 154   | 101   | 255   | 19:15          |       |    | 106   | 130   | 236   |        |     |      |
| 07:30          |    |    | 195   | 135   | 330   | 19:30          |       |    | 103   | 109   | 212   |        |     |      |
| 07:45          |    |    | 229   | 712   | 160   | 476            | 19:45 |    | 100   | 428   | 55    | 400    | 155 | 828  |
| 08:00          |    |    | 165   | 166   | 331   | 20:00          |       |    | 68    | 92    | 160   |        |     |      |
| 08:15          |    |    | 106   | 142   | 248   | 20:15          |       |    | 69    | 96    | 165   |        |     |      |
| 08:30          |    |    | 105   | 112   | 217   | 20:30          |       |    | 67    | 53    | 120   |        |     |      |
| 08:45          |    |    | 113   | 489   | 149   | 569            | 20:45 |    | 62    | 266   | 29    | 270    | 91  | 536  |
| 09:00          |    |    | 82    | 101   | 183   | 21:00          |       |    | 57    | 57    | 114   |        |     |      |
| 09:15          |    |    | 85    | 106   | 191   | 21:15          |       |    | 43    | 47    | 90    |        |     |      |
| 09:30          |    |    | 68    | 100   | 168   | 21:30          |       |    | 49    | 60    | 109   |        |     |      |
| 09:45          |    |    | 66    | 301   | 102   | 409            | 21:45 |    | 28    | 177   | 24    | 188    | 52  | 365  |
| 10:00          |    |    | 66    | 116   | 182   | 22:00          |       |    | 38    | 27    | 65    |        |     |      |
| 10:15          |    |    | 90    | 98    | 188   | 22:15          |       |    | 20    | 20    | 40    |        |     |      |
| 10:30          |    |    | 74    | 97    | 171   | 22:30          |       |    | 17    | 9     | 26    |        |     |      |
| 10:45          |    |    | 96    | 326   | 79    | 390            | 22:45 |    | 16    | 91    | 9     | 65     | 25  | 156  |
| 11:00          |    |    | 82    | 100   | 182   | 23:00          |       |    | 7     | 7     | 14    |        |     |      |
| 11:15          |    |    | 117   | 134   | 251   | 23:15          |       |    | 12    | 7     | 19    |        |     |      |
| 11:30          |    |    | 112   | 119   | 231   | 23:30          |       |    | 8     | 25    | 33    |        |     |      |
| 11:45          |    |    | 128   | 439   | 143   | 496            | 23:45 |    | 5     | 32    | 3     | 42     | 8   | 74   |
| <b>TOTALS</b>  |    |    | 2974  | 2666  | 5640  | <b>TOTALS</b>  |       |    | 5188  | 5671  | 10859 |        |     |      |
| <b>SPLIT %</b> |    |    | 52.7% | 47.3% | 34.2% | <b>SPLIT %</b> |       |    | 47.8% | 52.2% | 65.8% |        |     |      |

| DAILY TOTALS |  |  |  |  | NB | SB |       |  |  |       |  | Total  |
|--------------|--|--|--|--|----|----|-------|--|--|-------|--|--------|
|              |  |  |  |  | 0  | 0  |       |  |  |       |  | 16,499 |
|              |  |  |  |  |    |    | 8,162 |  |  | 8,337 |  |        |

|                 |       |       |       |                 |       |              |       |   |      |      |      |
|-----------------|-------|-------|-------|-----------------|-------|--------------|-------|---|------|------|------|
| AM Peak Hour    | 07:15 | 07:30 | 07:15 | PM Peak Hour    | 16:30 | 16:30        | 16:30 |   |      |      |      |
| AM Pk Volume    | 743   | 603   | 1305  | PM Pk Volume    | 854   | 972          | 1826  |   |      |      |      |
| Pk Hr Factor    | 0.811 | 0.908 | 0.839 | Pk Hr Factor    | 0.868 | 0.957        | 0.919 |   |      |      |      |
| 7 - 9 Volume    | 0     | 0     | 1201  | 1045            | 2246  | 4 - 6 Volume | 0     | 0 | 1591 | 1790 | 3381 |
| 7 - 9 Peak Hour | 07:15 | 07:30 | 07:15 | 4 - 6 Peak Hour | 16:30 | 16:30        | 16:30 |   |      |      |      |
| 7 - 9 Pk Volume | 743   | 603   | 1305  | 4 - 6 Pk Volume | 854   | 972          | 1826  |   |      |      |      |
| Pk Hr Factor    | 0.811 | 0.908 | 0.839 | Pk Hr Factor    | 0.868 | 0.957        | 0.919 |   |      |      |      |

**VOLUME**

Kraemer Blvd Bet. Birch St &amp; Imperial Hwy

Day: Tuesday  
Date: 3/27/2018City: Brea  
Project #: CA18\_1059\_007

| DAILY TOTALS   |       |       |     |      | NB           | SB             | EB    | WB    | Total  |     |              |
|----------------|-------|-------|-----|------|--------------|----------------|-------|-------|--------|-----|--------------|
|                |       |       |     |      | 8,819        | 10,869         | 0     | 0     | 19,688 |     |              |
| AM Period      | NB    | SB    | EB  | WB   | TOTAL        | PM Period      | NB    | SB    | EB     | WB  | TOTAL        |
| 00:00          | 5     | 5     |     |      | 10           | 12:00          | 165   | 259   |        |     | 424          |
| 00:15          | 7     | 4     |     |      | 11           | 12:15          | 176   | 226   |        |     | 402          |
| 00:30          | 4     | 2     |     |      | 6            | 12:30          | 182   | 203   |        |     | 385          |
| 00:45          | 4     | 20    | 6   | 17   | 10           | 12:45          | 139   | 662   | 202    | 890 | 341          |
| 01:00          | 8     | 3     |     |      | 11           | 13:00          | 153   | 210   |        |     | 363          |
| 01:15          | 2     | 0     |     |      | 2            | 13:15          | 135   | 155   |        |     | 290          |
| 01:30          | 4     | 2     |     |      | 6            | 13:30          | 155   | 151   |        |     | 306          |
| 01:45          | 2     | 16    | 5   | 10   | 7            | 13:45          | 142   | 585   | 132    | 648 | 274          |
| 02:00          | 5     | 5     |     |      | 10           | 14:00          | 155   | 144   |        |     | 299          |
| 02:15          | 5     | 1     |     |      | 6            | 14:15          | 129   | 159   |        |     | 288          |
| 02:30          | 1     | 1     |     |      | 2            | 14:30          | 180   | 155   |        |     | 335          |
| 02:45          | 2     | 13    | 3   | 10   | 5            | 14:45          | 150   | 614   | 162    | 620 | 312          |
| 03:00          | 0     | 5     |     |      | 5            | 15:00          | 125   | 161   |        |     | 286          |
| 03:15          | 1     | 3     |     |      | 4            | 15:15          | 164   | 178   |        |     | 342          |
| 03:30          | 6     | 4     |     |      | 10           | 15:30          | 221   | 124   |        |     | 345          |
| 03:45          | 4     | 11    | 6   | 18   | 10           | 15:45          | 179   | 689   | 181    | 644 | 360          |
| 04:00          | 6     | 12    |     |      | 18           | 16:00          | 222   | 158   |        |     | 380          |
| 04:15          | 7     | 7     |     |      | 14           | 16:15          | 188   | 172   |        |     | 360          |
| 04:30          | 9     | 23    |     |      | 32           | 16:30          | 235   | 151   |        |     | 386          |
| 04:45          | 27    | 49    | 33  | 75   | 60           | 16:45          | 211   | 856   | 211    | 692 | 422          |
| 05:00          | 17    | 12    |     |      | 29           | 17:00          | 259   | 206   |        |     | 465          |
| 05:15          | 20    | 40    |     |      | 60           | 17:15          | 239   | 226   |        |     | 465          |
| 05:30          | 17    | 49    |     |      | 66           | 17:30          | 236   | 176   |        |     | 412          |
| 05:45          | 43    | 97    | 89  | 190  | 132          | 17:45          | 201   | 935   | 167    | 775 | 368          |
| 06:00          | 36    | 89    |     |      | 125          | 18:00          | 213   | 141   |        |     | 354          |
| 06:15          | 39    | 133   |     |      | 172          | 18:15          | 188   | 151   |        |     | 339          |
| 06:30          | 55    | 176   |     |      | 231          | 18:30          | 175   | 138   |        |     | 313          |
| 06:45          | 96    | 226   | 202 | 600  | 298          | 18:45          | 143   | 719   | 100    | 530 | 243          |
| 07:00          | 71    | 250   |     |      | 321          | 19:00          | 157   | 125   |        |     | 282          |
| 07:15          | 82    | 229   |     |      | 311          | 19:15          | 122   | 96    |        |     | 218          |
| 07:30          | 81    | 235   |     |      | 316          | 19:30          | 128   | 99    |        |     | 227          |
| 07:45          | 143   | 377   | 305 | 1019 | 448          | 19:45          | 114   | 521   | 85     | 405 | 199          |
| 08:00          | 138   | 283   |     |      | 421          | 20:00          | 77    | 98    |        |     | 175          |
| 08:15          | 128   | 258   |     |      | 386          | 20:15          | 79    | 74    |        |     | 153          |
| 08:30          | 109   | 235   |     |      | 344          | 20:30          | 60    | 66    |        |     | 126          |
| 08:45          | 128   | 503   | 222 | 998  | 350          | 20:45          | 77    | 293   | 69     | 307 | 146          |
| 09:00          | 100   | 197   |     |      | 297          | 21:00          | 54    | 59    |        |     | 113          |
| 09:15          | 95    | 184   |     |      | 279          | 21:15          | 63    | 44    |        |     | 107          |
| 09:30          | 98    | 133   |     |      | 231          | 21:30          | 47    | 45    |        |     | 92           |
| 09:45          | 95    | 388   | 176 | 690  | 271          | 21:45          | 43    | 207   | 34     | 182 | 77           |
| 10:00          | 107   | 122   |     |      | 229          | 22:00          | 28    | 28    |        |     | 56           |
| 10:15          | 100   | 156   |     |      | 256          | 22:15          | 21    | 21    |        |     | 42           |
| 10:30          | 109   | 175   |     |      | 284          | 22:30          | 24    | 16    |        |     | 40           |
| 10:45          | 115   | 431   | 168 | 621  | 283          | 22:45          | 15    | 88    | 16     | 81  | 31           |
| 11:00          | 102   | 190   |     |      | 292          | 23:00          | 16    | 10    |        |     | 26           |
| 11:15          | 116   | 176   |     |      | 292          | 23:15          | 13    | 7     |        |     | 20           |
| 11:30          | 124   | 218   |     |      | 342          | 23:30          | 7     | 8     |        |     | 15           |
| 11:45          | 133   | 475   | 228 | 812  | 361          | 23:45          | 8     | 44    | 10     | 35  | 18           |
| <b>TOTALS</b>  | 2606  | 5060  |     |      | <b>7666</b>  | <b>TOTALS</b>  | 6213  | 5809  |        |     | <b>12022</b> |
| <b>SPLIT %</b> | 34.0% | 66.0% |     |      | <b>38.9%</b> | <b>SPLIT %</b> | 51.7% | 48.3% |        |     | <b>61.1%</b> |

| DAILY TOTALS |  |  |  |  | NB    | SB     | EB | WB | Total  |
|--------------|--|--|--|--|-------|--------|----|----|--------|
|              |  |  |  |  | 8,819 | 10,869 | 0  | 0  | 19,688 |

|                 |       |       |       |       |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    | 11:45 | 07:30 |       |       | 07:45 | PM Peak Hour    | 16:45 | 12:00 |       |       | 16:45 |
| AM Pk Volume    | 656   | 1081  |       |       | 1599  | PM Pk Volume    | 945   | 890   |       |       | 1764  |
| Pk Hr Factor    | 0.901 | 0.886 |       |       | 0.892 | Pk Hr Factor    | 0.912 | 0.859 |       |       | 0.948 |
| 7 - 9 Volume    | 880   | 2017  | 0     | 0     | 2897  | 4 - 6 Volume    | 1791  | 1467  | 0     | 0     | 3258  |
| 7 - 9 Peak Hour | 07:45 | 07:30 |       |       | 07:45 | 4 - 6 Peak Hour | 16:45 | 16:45 |       |       | 16:45 |
| 7 - 9 Pk Volume | 518   | 1081  | 0     | 0     | 1599  | 4 - 6 Pk Volume | 945   | 819   | 0     | 0     | 1764  |
| Pk Hr Factor    | 0.906 | 0.886 | 0.000 | 0.000 | 0.892 | Pk Hr Factor    | 0.912 | 0.906 | 0.000 | 0.000 | 0.948 |

### VOLUME

Valencia Ave S/O Birch St/Rose Dr

Day: Tuesday  
Date: 11/27/2018

City: Brea  
Project #: CA18\_1232\_010

| DAILY TOTALS   |              |              |     |     | NB           | SB             | EB           | WB           | Total  |     |              |
|----------------|--------------|--------------|-----|-----|--------------|----------------|--------------|--------------|--------|-----|--------------|
|                |              |              |     |     | 6,182        | 6,577          | 0            | 0            | 12,759 |     |              |
| AM Period      | NB           | SB           | EB  | WB  | TOTAL        | PM Period      | NB           | SB           | EB     | WB  | TOTAL        |
| 00:00          | 6            | 2            |     |     | 8            | 12:00          | 94           | 120          |        |     | 214          |
| 00:15          | 2            | 1            |     |     | 3            | 12:15          | 90           | 100          |        |     | 190          |
| 00:30          | 2            | 2            |     |     | 4            | 12:30          | 114          | 110          |        |     | 224          |
| 00:45          | 0            | 10           | 2   | 7   | 17           | 12:45          | 104          | 402          | 103    | 433 | 835          |
| 01:00          | 2            | 2            |     |     | 4            | 13:00          | 145          | 110          |        |     | 255          |
| 01:15          | 1            | 2            |     |     | 3            | 13:15          | 91           | 118          |        |     | 209          |
| 01:30          | 1            | 4            |     |     | 5            | 13:30          | 104          | 144          |        |     | 248          |
| 01:45          | 4            | 8            | 2   | 10  | 18           | 13:45          | 98           | 438          | 103    | 475 | 913          |
| 02:00          | 1            | 1            |     |     | 2            | 14:00          | 100          | 78           |        |     | 178          |
| 02:15          | 1            | 0            |     |     | 1            | 14:15          | 138          | 97           |        |     | 235          |
| 02:30          | 1            | 1            |     |     | 2            | 14:30          | 183          | 97           |        |     | 280          |
| 02:45          | 1            | 4            | 4   | 6   | 10           | 14:45          | 140          | 561          | 96     | 368 | 929          |
| 03:00          | 1            | 0            |     |     | 1            | 15:00          | 138          | 126          |        |     | 264          |
| 03:15          | 0            | 4            |     |     | 4            | 15:15          | 103          | 105          |        |     | 208          |
| 03:30          | 0            | 1            |     |     | 1            | 15:30          | 106          | 118          |        |     | 224          |
| 03:45          | 2            | 3            | 6   | 11  | 14           | 15:45          | 113          | 460          | 125    | 474 | 934          |
| 04:00          | 2            | 2            |     |     | 4            | 16:00          | 104          | 103          |        |     | 207          |
| 04:15          | 1            | 7            |     |     | 8            | 16:15          | 111          | 93           |        |     | 204          |
| 04:30          | 6            | 16           |     |     | 22           | 16:30          | 148          | 108          |        |     | 256          |
| 04:45          | 8            | 17           | 18  | 43  | 60           | 16:45          | 136          | 499          | 126    | 430 | 929          |
| 05:00          | 8            | 19           |     |     | 27           | 17:00          | 154          | 144          |        |     | 298          |
| 05:15          | 18           | 19           |     |     | 37           | 17:15          | 109          | 114          |        |     | 223          |
| 05:30          | 15           | 49           |     |     | 64           | 17:30          | 123          | 108          |        |     | 231          |
| 05:45          | 33           | 74           | 79  | 166 | 240          | 17:45          | 107          | 493          | 103    | 469 | 962          |
| 06:00          | 129          | 71           |     |     | 200          | 18:00          | 103          | 100          |        |     | 203          |
| 06:15          | 75           | 95           |     |     | 170          | 18:15          | 100          | 90           |        |     | 190          |
| 06:30          | 66           | 148          |     |     | 214          | 18:30          | 90           | 89           |        |     | 179          |
| 06:45          | 86           | 356          | 160 | 474 | 830          | 18:45          | 66           | 359          | 73     | 352 | 711          |
| 07:00          | 61           | 155          |     |     | 216          | 19:00          | 65           | 75           |        |     | 140          |
| 07:15          | 53           | 174          |     |     | 227          | 19:15          | 60           | 57           |        |     | 117          |
| 07:30          | 108          | 176          |     |     | 284          | 19:30          | 56           | 56           |        |     | 112          |
| 07:45          | 127          | 349          | 159 | 664 | 1013         | 19:45          | 36           | 217          | 42     | 230 | 447          |
| 08:00          | 109          | 183          |     |     | 292          | 20:00          | 59           | 62           |        |     | 121          |
| 08:15          | 113          | 148          |     |     | 261          | 20:15          | 48           | 49           |        |     | 97           |
| 08:30          | 96           | 142          |     |     | 238          | 20:30          | 26           | 29           |        |     | 55           |
| 08:45          | 89           | 407          | 152 | 625 | 1032         | 20:45          | 27           | 160          | 29     | 169 | 329          |
| 09:00          | 98           | 124          |     |     | 222          | 21:00          | 44           | 23           |        |     | 67           |
| 09:15          | 118          | 93           |     |     | 211          | 21:15          | 25           | 19           |        |     | 44           |
| 09:30          | 78           | 86           |     |     | 164          | 21:30          | 22           | 14           |        |     | 36           |
| 09:45          | 94           | 388          | 105 | 408 | 796          | 21:45          | 19           | 110          | 26     | 82  | 192          |
| 10:00          | 105          | 86           |     |     | 191          | 22:00          | 16           | 13           |        |     | 29           |
| 10:15          | 107          | 80           |     |     | 187          | 22:15          | 15           | 7            |        |     | 22           |
| 10:30          | 125          | 80           |     |     | 205          | 22:30          | 11           | 5            |        |     | 16           |
| 10:45          | 89           | 426          | 70  | 316 | 742          | 22:45          | 11           | 53           | 7      | 32  | 85           |
| 11:00          | 100          | 77           |     |     | 177          | 23:00          | 11           | 4            |        |     | 15           |
| 11:15          | 93           | 77           |     |     | 170          | 23:15          | 4            | 1            |        |     | 5            |
| 11:30          | 87           | 76           |     |     | 163          | 23:30          | 3            | 5            |        |     | 8            |
| 11:45          | 81           | 361          | 87  | 317 | 678          | 23:45          | 9            | 27           | 6      | 16  | 43           |
| <b>TOTALS</b>  | <b>2403</b>  | <b>3047</b>  |     |     | <b>5450</b>  | <b>TOTALS</b>  | <b>3779</b>  | <b>3530</b>  |        |     | <b>7309</b>  |
| <b>SPLIT %</b> | <b>44.1%</b> | <b>55.9%</b> |     |     | <b>42.7%</b> | <b>SPLIT %</b> | <b>51.7%</b> | <b>48.3%</b> |        |     | <b>57.3%</b> |

| DAILY TOTALS    |       |       |       |       | NB              | SB              | EB    | WB    | Total  |       |       |
|-----------------|-------|-------|-------|-------|-----------------|-----------------|-------|-------|--------|-------|-------|
|                 |       |       |       |       | 6,182           | 6,577           | 0     | 0     | 12,759 |       |       |
| AM Peak Hour    | 07:30 | 07:15 |       | 07:30 | PM Peak Hour    | 14:15           | 16:30 |       | 16:30  |       |       |
| AM Pk Volume    | 457   | 692   |       | 1123  | PM Pk Volume    | 599             | 492   |       | 1039   |       |       |
| Pk Hr Factor    | 0.900 | 0.945 |       | 0.961 | Pk Hr Factor    | 0.818           | 0.854 |       | 0.872  |       |       |
| 7 - 9 Volume    | 756   | 1289  | 0     | 0     | 2045            | 4 - 6 Volume    | 992   | 899   | 0      | 0     | 1891  |
| 7 - 9 Peak Hour | 07:30 | 07:15 |       | 07:30 | 4 - 6 Peak Hour | 16:15           | 16:30 |       |        |       | 16:30 |
| 7 - 9 Pk Volume | 457   | 692   | 0     | 0     | 1123            | 4 - 6 Pk Volume | 549   | 492   | 0      | 0     | 1039  |
| Pk Hr Factor    | 0.900 | 0.945 | 0.000 | 0.000 | 0.961           | Pk Hr Factor    | 0.891 | 0.854 | 0.000  | 0.000 | 0.872 |

# VOLUME

Rose Dr S/O Valencia Ave

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1232\_011

| DAILY TOTALS   |              |              |     |      | NB           | SB             | EB           | WB           | Total  |      |              |
|----------------|--------------|--------------|-----|------|--------------|----------------|--------------|--------------|--------|------|--------------|
|                |              |              |     |      | 9,204        | 11,171         | 0            | 0            | 20,375 |      |              |
| AM Period      | NB           | SB           | EB  | WB   | TOTAL        | PM Period      | NB           | SB           | EB     | WB   | TOTAL        |
| 00:00          | 3            | 5            |     |      | 8            | 12:00          | 123          | 121          |        |      | 244          |
| 00:15          | 2            | 3            |     |      | 5            | 12:15          | 119          | 123          |        |      | 242          |
| 00:30          | 3            | 5            |     |      | 8            | 12:30          | 106          | 118          |        |      | 224          |
| 00:45          | 5            | 13           | 4   | 17   | 9            | 12:45          | 110          | 458          | 109    | 471  | 219          |
| 01:00          | 5            | 1            |     |      | 6            | 13:00          | 113          | 114          |        |      | 227          |
| 01:15          | 1            | 2            |     |      | 3            | 13:15          | 98           | 112          |        |      | 210          |
| 01:30          | 1            | 3            |     |      | 4            | 13:30          | 114          | 125          |        |      | 239          |
| 01:45          | 1            | 8            | 0   | 6    | 1            | 13:45          | 126          | 451          | 147    | 498  | 273          |
| 02:00          | 2            | 1            |     |      | 3            | 14:00          | 107          | 140          |        |      | 247          |
| 02:15          | 4            | 0            |     |      | 4            | 14:15          | 140          | 157          |        |      | 297          |
| 02:30          | 2            | 2            |     |      | 4            | 14:30          | 158          | 156          |        |      | 314          |
| 02:45          | 5            | 13           | 1   | 4    | 6            | 14:45          | 170          | 575          | 180    | 633  | 350          |
| 03:00          | 2            | 2            |     |      | 4            | 15:00          | 203          | 188          |        |      | 391          |
| 03:15          | 3            | 2            |     |      | 5            | 15:15          | 206          | 218          |        |      | 424          |
| 03:30          | 9            | 3            |     |      | 12           | 15:30          | 199          | 183          |        |      | 382          |
| 03:45          | 6            | 20           | 6   | 13   | 12           | 15:45          | 243          | 851          | 196    | 785  | 439          |
| 04:00          | 6            | 4            |     |      | 10           | 16:00          | 228          | 224          |        |      | 452          |
| 04:15          | 10           | 12           |     |      | 22           | 16:15          | 226          | 230          |        |      | 456          |
| 04:30          | 9            | 27           |     |      | 36           | 16:30          | 241          | 258          |        |      | 499          |
| 04:45          | 11           | 36           | 24  | 67   | 35           | 16:45          | 258          | 953          | 291    | 1003 | 549          |
| 05:00          | 21           | 41           |     |      | 62           | 17:00          | 245          | 258          |        |      | 503          |
| 05:15          | 27           | 66           |     |      | 93           | 17:15          | 243          | 233          |        |      | 476          |
| 05:30          | 51           | 98           |     |      | 149          | 17:30          | 236          | 262          |        |      | 498          |
| 05:45          | 63           | 162          | 140 | 345  | 203          | 17:45          | 249          | 973          | 216    | 969  | 465          |
| 06:00          | 61           | 174          |     |      | 235          | 18:00          | 237          | 205          |        |      | 442          |
| 06:15          | 59           | 214          |     |      | 273          | 18:15          | 198          | 173          |        |      | 371          |
| 06:30          | 89           | 245          |     |      | 334          | 18:30          | 163          | 159          |        |      | 322          |
| 06:45          | 135          | 344          | 273 | 906  | 408          | 18:45          | 141          | 739          | 156    | 693  | 297          |
| 07:00          | 129          | 291          |     |      | 420          | 19:00          | 147          | 107          |        |      | 254          |
| 07:15          | 153          | 305          |     |      | 458          | 19:15          | 116          | 111          |        |      | 227          |
| 07:30          | 156          | 314          |     |      | 470          | 19:30          | 93           | 65           |        |      | 158          |
| 07:45          | 170          | 608          | 294 | 1204 | 464          | 19:45          | 90           | 446          | 82     | 365  | 172          |
| 08:00          | 190          | 266          |     |      | 456          | 20:00          | 74           | 77           |        |      | 151          |
| 08:15          | 173          | 267          |     |      | 440          | 20:15          | 62           | 70           |        |      | 132          |
| 08:30          | 148          | 226          |     |      | 374          | 20:30          | 56           | 85           |        |      | 141          |
| 08:45          | 162          | 673          | 251 | 1010 | 413          | 20:45          | 60           | 252          | 87     | 319  | 147          |
| 09:00          | 118          | 184          |     |      | 302          | 21:00          | 59           | 74           |        |      | 133          |
| 09:15          | 104          | 149          |     |      | 253          | 21:15          | 57           | 52           |        |      | 109          |
| 09:30          | 116          | 161          |     |      | 277          | 21:30          | 39           | 46           |        |      | 85           |
| 09:45          | 120          | 458          | 120 | 614  | 240          | 21:45          | 34           | 189          | 29     | 201  | 63           |
| 10:00          | 103          | 114          |     |      | 217          | 22:00          | 27           | 37           |        |      | 64           |
| 10:15          | 102          | 103          |     |      | 205          | 22:15          | 22           | 25           |        |      | 47           |
| 10:30          | 99           | 106          |     |      | 205          | 22:30          | 18           | 20           |        |      | 38           |
| 10:45          | 110          | 414          | 118 | 441  | 228          | 22:45          | 10           | 77           | 15     | 97   | 25           |
| 11:00          | 113          | 113          |     |      | 226          | 23:00          | 14           | 17           |        |      | 31           |
| 11:15          | 98           | 100          |     |      | 198          | 23:15          | 14           | 13           |        |      | 27           |
| 11:30          | 116          | 128          |     |      | 244          | 23:30          | 5            | 10           |        |      | 15           |
| 11:45          | 123          | 450          | 115 | 456  | 238          | 23:45          | 8            | 41           | 14     | 54   | 22           |
| <b>TOTALS</b>  | <b>3199</b>  | <b>5083</b>  |     |      | <b>8282</b>  | <b>TOTALS</b>  | <b>6005</b>  | <b>6088</b>  |        |      | <b>12093</b> |
| <b>SPLIT %</b> | <b>38.6%</b> | <b>61.4%</b> |     |      | <b>40.6%</b> | <b>SPLIT %</b> | <b>49.7%</b> | <b>50.3%</b> |        |      | <b>59.4%</b> |

| DAILY TOTALS    |       |       |       |       | NB    | SB              | EB    | WB    | Total  |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|--------|-------|-------|
|                 |       |       |       |       | 9,204 | 11,171          | 0     | 0     | 20,375 |       |       |
| AM Peak Hour    | 07:30 | 07:00 |       |       | 07:15 | PM Peak Hour    | 16:30 | 16:45 | 16:30  |       |       |
| AM Pk Volume    | 689   | 1204  |       |       | 1848  | PM Pk Volume    | 987   | 1044  | 2027   |       |       |
| Pk Hr Factor    | 0.907 | 0.959 |       |       | 0.983 | Pk Hr Factor    | 0.956 | 0.897 | 0.923  |       |       |
| 7 - 9 Volume    | 1281  | 2214  | 0     | 0     | 3495  | 4 - 6 Volume    | 1926  | 1972  | 0      | 0     | 3898  |
| 7 - 9 Peak Hour | 07:30 | 07:00 |       |       | 07:15 | 4 - 6 Peak Hour | 16:30 | 16:45 |        |       | 16:30 |
| 7 - 9 Pk Volume | 689   | 1204  | 0     | 0     | 1848  | 4 - 6 Pk Volume | 987   | 1044  | 0      | 0     | 2027  |
| Pk Hr Factor    | 0.907 | 0.959 | 0.000 | 0.000 | 0.983 | Pk Hr Factor    | 0.956 | 0.897 | 0.000  | 0.000 | 0.923 |



**VOLUME**

Rose Dr N/O Imperial Hwy

Day: Tuesday  
Date: 11/13/2018City: Brea  
Project #: CA18\_1232\_012

| DAILY TOTALS   |              |              |     |     | NB           | SB             | EB           | WB           | Total  |     |              |
|----------------|--------------|--------------|-----|-----|--------------|----------------|--------------|--------------|--------|-----|--------------|
|                |              |              |     |     | 10,000       | 9,746          | 0            | 0            | 19,746 |     |              |
| AM Period      | NB           | SB           | EB  | WB  | TOTAL        | PM Period      | NB           | SB           | EB     | WB  | TOTAL        |
| 00:00          | 2            | 7            |     |     | 9            | 12:00          | 125          | 125          |        |     | 250          |
| 00:15          | 6            | 1            |     |     | 7            | 12:15          | 121          | 132          |        |     | 253          |
| 00:30          | 7            | 3            |     |     | 10           | 12:30          | 120          | 133          |        |     | 253          |
| 00:45          | 5            | 20           | 5   | 16  | 10           | 12:45          | 130          | 496          | 121    | 511 | 251          |
| 01:00          | 5            | 2            |     |     | 7            | 13:00          | 130          | 134          |        |     | 264          |
| 01:15          | 2            | 1            |     |     | 3            | 13:15          | 113          | 124          |        |     | 237          |
| 01:30          | 2            | 4            |     |     | 6            | 13:30          | 142          | 129          |        |     | 271          |
| 01:45          | 1            | 10           | 1   | 8   | 2            | 13:45          | 139          | 524          | 155    | 542 | 294          |
| 02:00          | 3            | 0            |     |     | 3            | 14:00          | 135          | 164          |        |     | 299          |
| 02:15          | 5            | 0            |     |     | 5            | 14:15          | 183          | 140          |        |     | 323          |
| 02:30          | 4            | 3            |     |     | 7            | 14:30          | 161          | 129          |        |     | 290          |
| 02:45          | 4            | 16           | 1   | 4   | 5            | 14:45          | 183          | 662          | 142    | 575 | 325          |
| 03:00          | 1            | 3            |     |     | 4            | 15:00          | 225          | 150          |        |     | 375          |
| 03:15          | 3            | 1            |     |     | 4            | 15:15          | 238          | 166          |        |     | 404          |
| 03:30          | 14           | 7            |     |     | 21           | 15:30          | 218          | 176          |        |     | 394          |
| 03:45          | 4            | 22           | 5   | 16  | 9            | 15:45          | 258          | 939          | 179    | 671 | 437          |
| 04:00          | 6            | 7            |     |     | 13           | 16:00          | 246          | 183          |        |     | 429          |
| 04:15          | 9            | 13           |     |     | 22           | 16:15          | 247          | 174          |        |     | 421          |
| 04:30          | 10           | 22           |     |     | 32           | 16:30          | 247          | 191          |        |     | 438          |
| 04:45          | 16           | 41           | 27  | 69  | 43           | 16:45          | 260          | 1000         | 191    | 739 | 451          |
| 05:00          | 26           | 36           |     |     | 62           | 17:00          | 271          | 178          |        |     | 449          |
| 05:15          | 35           | 65           |     |     | 100          | 17:15          | 263          | 172          |        |     | 435          |
| 05:30          | 56           | 90           |     |     | 146          | 17:30          | 253          | 171          |        |     | 424          |
| 05:45          | 70           | 187          | 137 | 328 | 207          | 17:45          | 262          | 1049         | 166    | 687 | 428          |
| 06:00          | 61           | 140          |     |     | 201          | 18:00          | 252          | 158          |        |     | 410          |
| 06:15          | 65           | 170          |     |     | 235          | 18:15          | 205          | 153          |        |     | 358          |
| 06:30          | 95           | 196          |     |     | 291          | 18:30          | 181          | 147          |        |     | 328          |
| 06:45          | 128          | 349          | 200 | 706 | 328          | 18:45          | 143          | 781          | 118    | 576 | 261          |
| 07:00          | 138          | 187          |     |     | 325          | 19:00          | 140          | 106          |        |     | 246          |
| 07:15          | 143          | 202          |     |     | 345          | 19:15          | 133          | 85           |        |     | 218          |
| 07:30          | 158          | 206          |     |     | 364          | 19:30          | 118          | 68           |        |     | 186          |
| 07:45          | 181          | 620          | 229 | 824 | 410          | 19:45          | 93           | 484          | 60     | 319 | 153          |
| 08:00          | 201          | 223          |     |     | 424          | 20:00          | 84           | 79           |        |     | 163          |
| 08:15          | 170          | 224          |     |     | 394          | 20:15          | 67           | 75           |        |     | 142          |
| 08:30          | 159          | 170          |     |     | 329          | 20:30          | 64           | 70           |        |     | 134          |
| 08:45          | 164          | 694          | 183 | 800 | 347          | 20:45          | 59           | 274          | 71     | 295 | 130          |
| 09:00          | 126          | 209          |     |     | 335          | 21:00          | 73           | 72           |        |     | 145          |
| 09:15          | 115          | 190          |     |     | 305          | 21:15          | 59           | 62           |        |     | 121          |
| 09:30          | 132          | 137          |     |     | 269          | 21:30          | 41           | 36           |        |     | 77           |
| 09:45          | 123          | 496          | 141 | 677 | 264          | 21:45          | 36           | 209          | 30     | 200 | 66           |
| 10:00          | 120          | 138          |     |     | 258          | 22:00          | 28           | 27           |        |     | 55           |
| 10:15          | 113          | 130          |     |     | 243          | 22:15          | 28           | 30           |        |     | 58           |
| 10:30          | 130          | 126          |     |     | 256          | 22:30          | 17           | 16           |        |     | 33           |
| 10:45          | 128          | 491          | 135 | 529 | 263          | 22:45          | 14           | 87           | 11     | 84  | 25           |
| 11:00          | 116          | 134          |     |     | 250          | 23:00          | 19           | 16           |        |     | 35           |
| 11:15          | 126          | 148          |     |     | 274          | 23:15          | 13           | 11           |        |     | 24           |
| 11:30          | 126          | 134          |     |     | 260          | 23:30          | 7            | 6            |        |     | 13           |
| 11:45          | 133          | 501          | 115 | 531 | 248          | 23:45          | 9            | 48           | 6      | 39  | 15           |
| <b>TOTALS</b>  | <b>3447</b>  | <b>4508</b>  |     |     | <b>7955</b>  | <b>TOTALS</b>  | <b>6553</b>  | <b>5238</b>  |        |     | <b>11791</b> |
| <b>SPLIT %</b> | <b>43.3%</b> | <b>56.7%</b> |     |     | <b>40.3%</b> | <b>SPLIT %</b> | <b>55.6%</b> | <b>44.4%</b> |        |     | <b>59.7%</b> |

| DAILY TOTALS    |       |       |       |       | NB              | SB    | EB    | WB    | Total  |       |
|-----------------|-------|-------|-------|-------|-----------------|-------|-------|-------|--------|-------|
|                 |       |       |       |       | 10,000          | 9,746 | 0     | 0     | 19,746 |       |
| AM Peak Hour    | 07:45 | 07:30 |       | 07:30 | PM Peak Hour    | 17:00 | 16:00 |       | 16:30  |       |
| AM Pk Volume    | 711   | 882   |       | 1592  | PM Pk Volume    | 1049  | 739   |       | 1773   |       |
| Pk Hr Factor    | 0.884 | 0.963 |       | 0.939 | Pk Hr Factor    | 0.968 | 0.967 |       | 0.983  |       |
| 7 - 9 Volume    | 1314  | 1624  | 0     | 0     | 4 - 6 Volume    | 2049  | 1426  | 0     | 0      | 3475  |
| 7 - 9 Peak Hour | 07:45 | 07:30 |       | 07:30 | 4 - 6 Peak Hour | 17:00 | 16:00 |       |        | 16:30 |
| 7 - 9 Pk Volume | 711   | 882   | 0     | 0     | 4 - 6 Pk Volume | 1049  | 739   | 0     | 0      | 1773  |
| Pk Hr Factor    | 0.884 | 0.963 | 0.000 | 0.000 | Pk Hr Factor    | 0.968 | 0.967 | 0.000 | 0.000  | 0.983 |

**VOLUME**

Imperial Hwy E/O State College Blvd

Day: Thursday  
Date: 4/19/2018

City: Brea  
Project #: CA18\_1082\_013

| DAILY TOTALS   |    |    |     |       | NB     | SB    |                |    |    |        |       | Total  |       |      |  |
|----------------|----|----|-----|-------|--------|-------|----------------|----|----|--------|-------|--------|-------|------|--|
|                |    |    |     |       | 0      | 0     |                |    |    |        |       | 71,271 |       |      |  |
|                |    |    |     |       | 33,879 |       |                |    |    | 37,392 |       |        |       |      |  |
| AM Period      | NB | SB | EB  | WB    | TOTAL  |       | PM Period      | NB | SB | EB     | WB    | TOTAL  |       |      |  |
| 00:00          |    |    | 51  | 60    | 111    |       | 12:00          |    |    | 498    | 559   | 1057   |       |      |  |
| 00:15          |    |    | 51  | 59    | 110    |       | 12:15          |    |    | 497    | 622   | 1119   |       |      |  |
| 00:30          |    |    | 47  | 41    | 88     |       | 12:30          |    |    | 551    | 639   | 1190   |       |      |  |
| 00:45          |    |    | 44  | 193   | 38     | 198   | 12:45          |    |    | 519    | 2065  | 618    | 2438  | 4503 |  |
| 01:00          |    |    | 37  | 34    | 71     |       | 13:00          |    |    | 550    | 572   | 1122   |       |      |  |
| 01:15          |    |    | 30  | 33    | 63     |       | 13:15          |    |    | 480    | 606   | 1086   |       |      |  |
| 01:30          |    |    | 27  | 45    | 72     |       | 13:30          |    |    | 510    | 610   | 1120   |       |      |  |
| 01:45          |    |    | 29  | 123   | 40     | 152   | 13:45          |    |    | 536    | 2076  | 547    | 2335  | 4411 |  |
| 02:00          |    |    | 24  | 36    | 60     |       | 14:00          |    |    | 500    | 521   | 1021   |       |      |  |
| 02:15          |    |    | 35  | 33    | 68     |       | 14:15          |    |    | 506    | 542   | 1048   |       |      |  |
| 02:30          |    |    | 54  | 49    | 103    |       | 14:30          |    |    | 527    | 605   | 1132   |       |      |  |
| 02:45          |    |    | 38  | 151   | 78     | 196   | 14:45          |    |    | 538    | 2071  | 597    | 2265  | 4336 |  |
| 03:00          |    |    | 33  | 39    | 72     |       | 15:00          |    |    | 539    | 636   | 1175   |       |      |  |
| 03:15          |    |    | 56  | 62    | 118    |       | 15:15          |    |    | 541    | 550   | 1091   |       |      |  |
| 03:30          |    |    | 78  | 84    | 162    |       | 15:30          |    |    | 547    | 563   | 1110   |       |      |  |
| 03:45          |    |    | 61  | 228   | 97     | 282   | 15:45          |    |    | 588    | 2215  | 645    | 2394  | 4609 |  |
| 04:00          |    |    | 79  | 93    | 172    |       | 16:00          |    |    | 627    | 649   | 1276   |       |      |  |
| 04:15          |    |    | 97  | 148   | 245    |       | 16:15          |    |    | 641    | 719   | 1360   |       |      |  |
| 04:30          |    |    | 138 | 113   | 251    |       | 16:30          |    |    | 646    | 691   | 1337   |       |      |  |
| 04:45          |    |    | 147 | 461   | 209    | 563   | 16:45          |    |    | 632    | 2546  | 646    | 2705  | 5251 |  |
| 05:00          |    |    | 139 | 153   | 292    |       | 17:00          |    |    | 617    | 688   | 1305   |       |      |  |
| 05:15          |    |    | 157 | 202   | 359    |       | 17:15          |    |    | 653    | 684   | 1337   |       |      |  |
| 05:30          |    |    | 214 | 225   | 439    |       | 17:30          |    |    | 633    | 683   | 1316   |       |      |  |
| 05:45          |    |    | 302 | 812   | 305    | 885   | 17:45          |    |    | 625    | 2528  | 724    | 2779  | 5307 |  |
| 06:00          |    |    | 208 | 235   | 443    |       | 18:00          |    |    | 548    | 715   | 1263   |       |      |  |
| 06:15          |    |    | 263 | 276   | 539    |       | 18:15          |    |    | 586    | 640   | 1226   |       |      |  |
| 06:30          |    |    | 317 | 344   | 661    |       | 18:30          |    |    | 525    | 597   | 1122   |       |      |  |
| 06:45          |    |    | 446 | 1234  | 441    | 1296  | 18:45          |    |    | 533    | 2192  | 591    | 2543  | 4735 |  |
| 07:00          |    |    | 372 | 402   | 774    |       | 19:00          |    |    | 513    | 563   | 1076   |       |      |  |
| 07:15          |    |    | 474 | 528   | 1002   |       | 19:15          |    |    | 497    | 484   | 981    |       |      |  |
| 07:30          |    |    | 530 | 512   | 1042   |       | 19:30          |    |    | 452    | 497   | 949    |       |      |  |
| 07:45          |    |    | 518 | 1894  | 545    | 1987  | 19:45          |    |    | 420    | 1882  | 490    | 2034  | 3916 |  |
| 08:00          |    |    | 460 | 477   | 937    |       | 20:00          |    |    | 406    | 432   | 838    |       |      |  |
| 08:15          |    |    | 496 | 501   | 997    |       | 20:15          |    |    | 361    | 433   | 794    |       |      |  |
| 08:30          |    |    | 465 | 505   | 970    |       | 20:30          |    |    | 316    | 419   | 735    |       |      |  |
| 08:45          |    |    | 464 | 1885  | 528    | 2011  | 20:45          |    |    | 297    | 1380  | 352    | 1636  | 3016 |  |
| 09:00          |    |    | 446 | 417   | 863    |       | 21:00          |    |    | 326    | 348   | 674    |       |      |  |
| 09:15          |    |    | 495 | 528   | 1023   |       | 21:15          |    |    | 272    | 253   | 525    |       |      |  |
| 09:30          |    |    | 462 | 488   | 950    |       | 21:30          |    |    | 239    | 235   | 474    |       |      |  |
| 09:45          |    |    | 538 | 1941  | 571    | 2004  | 21:45          |    |    | 212    | 1049  | 241    | 1077  | 2126 |  |
| 10:00          |    |    | 449 | 553   | 1002   |       | 22:00          |    |    | 168    | 215   | 383    |       |      |  |
| 10:15          |    |    | 480 | 559   | 1039   |       | 22:15          |    |    | 190    | 182   | 372    |       |      |  |
| 10:30          |    |    | 440 | 524   | 964    |       | 22:30          |    |    | 165    | 173   | 338    |       |      |  |
| 10:45          |    |    | 473 | 1842  | 591    | 2227  | 22:45          |    |    | 123    | 646   | 132    | 702   | 1348 |  |
| 11:00          |    |    | 493 | 531   | 1024   |       | 23:00          |    |    | 93     | 98    | 191    |       |      |  |
| 11:15          |    |    | 529 | 545   | 1074   |       | 23:15          |    |    | 71     | 138   | 209    |       |      |  |
| 11:30          |    |    | 565 | 607   | 1172   |       | 23:30          |    |    | 76     | 101   | 177    |       |      |  |
| 11:45          |    |    | 556 | 2143  | 572    | 2255  | 23:45          |    |    | 82     | 322   | 91     | 428   | 750  |  |
| <b>TOTALS</b>  |    |    |     | 12907 | 14056  | 26963 | <b>TOTALS</b>  |    |    |        | 20972 | 23336  | 44308 |      |  |
| <b>SPLIT %</b> |    |    |     | 47.9% | 52.1%  | 37.8% | <b>SPLIT %</b> |    |    |        | 47.3% | 52.7%  | 62.2% |      |  |

| DAILY TOTALS |  |  |  |  | NB     | SB |  |  |  |        |  | Total  |  |  |  |
|--------------|--|--|--|--|--------|----|--|--|--|--------|--|--------|--|--|--|
|              |  |  |  |  | 0      | 0  |  |  |  |        |  | 71,271 |  |  |  |
|              |  |  |  |  | 33,879 |    |  |  |  | 37,392 |  |        |  |  |  |

|                 |       |       |       |       |       |  |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|--|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    |       |       | 11:15 | 11:45 | 11:45 |  | PM Peak Hour    |       |       | 16:30 | 17:15 | 17:00 |
| AM Pk Volume    |       |       | 2148  | 2392  | 4494  |  | PM Pk Volume    |       |       | 2548  | 2806  | 5307  |
| Pk Hr Factor    |       |       | 0.950 | 0.936 | 0.944 |  | Pk Hr Factor    |       |       | 0.975 | 0.969 | 0.984 |
| 7 - 9 Volume    | 0     | 0     | 3779  | 3998  | 7777  |  | 4 - 6 Volume    | 0     | 0     | 5074  | 5484  | 10558 |
| 7 - 9 Peak Hour |       |       | 07:30 | 07:15 | 07:15 |  | 4 - 6 Peak Hour |       |       | 16:30 | 17:00 | 17:00 |
| 7 - 9 Pk Volume | 0     | 0     | 2004  | 2062  | 4044  |  | 4 - 6 Pk Volume | 0     | 0     | 2548  | 2779  | 5307  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.945 | 0.946 | 0.951 |  | Pk Hr Factor    | 0.000 | 0.000 | 0.975 | 0.960 | 0.984 |

**VOLUME**

Imperial Hwy E/O SR-57 NB Ramps

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1233\_013

| DAILY TOTALS   |    |    |       |       | NB     | SB             |       |    |       |       |       | Total  |      |      |
|----------------|----|----|-------|-------|--------|----------------|-------|----|-------|-------|-------|--------|------|------|
|                |    |    |       |       | 0      | 0              |       |    |       |       |       | 53,058 |      |      |
|                |    |    |       |       | 26,754 |                |       |    |       |       |       | 26,304 |      |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL  | PM Period      | NB    | SB | EB    | WB    | TOTAL |        |      |      |
| 0:00           |    |    | 44    | 32    | 76     | 12:00          |       |    | 363   | 466   | 829   |        |      |      |
| 0:15           |    |    | 36    | 32    | 68     | 12:15          |       |    | 394   | 437   | 831   |        |      |      |
| 0:30           |    |    | 34    | 23    | 57     | 12:30          |       |    | 365   | 461   | 826   |        |      |      |
| 0:45           |    |    | 16    | 130   | 11     | 98             | 12:45 |    | 394   | 1516  | 454   | 1818   | 848  | 3334 |
| 1:00           |    |    | 22    | 27    | 49     | 13:00          |       |    | 390   | 438   | 828   |        |      |      |
| 1:15           |    |    | 17    | 9     | 26     | 13:15          |       |    | 428   | 431   | 859   |        |      |      |
| 1:30           |    |    | 19    | 29    | 48     | 13:30          |       |    | 409   | 449   | 858   |        |      |      |
| 1:45           |    |    | 19    | 77    | 18     | 83             | 13:45 |    | 429   | 1656  | 404   | 1722   | 833  | 3378 |
| 2:00           |    |    | 14    | 17    | 31     | 14:00          |       |    | 412   | 426   | 838   |        |      |      |
| 2:15           |    |    | 14    | 16    | 30     | 14:15          |       |    | 378   | 441   | 819   |        |      |      |
| 2:30           |    |    | 18    | 12    | 30     | 14:30          |       |    | 393   | 456   | 849   |        |      |      |
| 2:45           |    |    | 26    | 72    | 14     | 59             | 14:45 |    | 396   | 1579  | 414   | 1737   | 810  | 3316 |
| 3:00           |    |    | 14    | 21    | 35     | 15:00          |       |    | 398   | 484   | 882   |        |      |      |
| 3:15           |    |    | 10    | 21    | 31     | 15:15          |       |    | 465   | 450   | 915   |        |      |      |
| 3:30           |    |    | 25    | 43    | 68     | 15:30          |       |    | 491   | 480   | 971   |        |      |      |
| 3:45           |    |    | 35    | 84    | 38     | 123            | 15:45 |    | 473   | 1827  | 517   | 1931   | 990  | 3758 |
| 4:00           |    |    | 32    | 47    | 79     | 16:00          |       |    | 469   | 473   | 942   |        |      |      |
| 4:15           |    |    | 38    | 50    | 88     | 16:15          |       |    | 499   | 486   | 985   |        |      |      |
| 4:30           |    |    | 107   | 89    | 196    | 16:30          |       |    | 473   | 497   | 970   |        |      |      |
| 4:45           |    |    | 153   | 330   | 87     | 273            | 16:45 |    | 496   | 1937  | 483   | 1939   | 979  | 3876 |
| 5:00           |    |    | 88    | 98    | 186    | 17:00          |       |    | 469   | 451   | 920   |        |      |      |
| 5:15           |    |    | 133   | 117   | 250    | 17:15          |       |    | 530   | 525   | 1055  |        |      |      |
| 5:30           |    |    | 177   | 188   | 365    | 17:30          |       |    | 514   | 496   | 1010  |        |      |      |
| 5:45           |    |    | 235   | 633   | 179    | 582            | 17:45 |    | 537   | 2050  | 476   | 1948   | 1013 | 3998 |
| 6:00           |    |    | 249   | 228   | 477    | 18:00          |       |    | 464   | 436   | 900   |        |      |      |
| 6:15           |    |    | 260   | 233   | 493    | 18:15          |       |    | 477   | 418   | 895   |        |      |      |
| 6:30           |    |    | 404   | 255   | 659    | 18:30          |       |    | 418   | 378   | 796   |        |      |      |
| 6:45           |    |    | 417   | 1330  | 310    | 1026           | 18:45 |    | 389   | 1748  | 347   | 1579   | 736  | 3327 |
| 7:00           |    |    | 441   | 336   | 777    | 19:00          |       |    | 380   | 340   | 720   |        |      |      |
| 7:15           |    |    | 446   | 374   | 820    | 19:15          |       |    | 358   | 346   | 704   |        |      |      |
| 7:30           |    |    | 446   | 418   | 864    | 19:30          |       |    | 292   | 310   | 602   |        |      |      |
| 7:45           |    |    | 531   | 1864  | 447    | 1575           | 19:45 |    | 268   | 1298  | 276   | 1272   | 544  | 2570 |
| 8:00           |    |    | 477   | 455   | 932    | 20:00          |       |    | 253   | 301   | 554   |        |      |      |
| 8:15           |    |    | 483   | 413   | 896    | 20:15          |       |    | 254   | 247   | 501   |        |      |      |
| 8:30           |    |    | 518   | 354   | 872    | 20:30          |       |    | 242   | 245   | 487   |        |      |      |
| 8:45           |    |    | 462   | 1940  | 342    | 1564           | 20:45 |    | 205   | 954   | 247   | 1040   | 452  | 1994 |
| 9:00           |    |    | 413   | 297   | 710    | 21:00          |       |    | 180   | 230   | 410   |        |      |      |
| 9:15           |    |    | 359   | 295   | 654    | 21:15          |       |    | 176   | 222   | 398   |        |      |      |
| 9:30           |    |    | 369   | 290   | 659    | 21:30          |       |    | 141   | 164   | 305   |        |      |      |
| 9:45           |    |    | 374   | 1515  | 376    | 1258           | 21:45 |    | 137   | 634   | 163   | 779    | 300  | 1413 |
| 10:00          |    |    | 362   | 349   | 711    | 22:00          |       |    | 142   | 145   | 287   |        |      |      |
| 10:15          |    |    | 412   | 339   | 751    | 22:15          |       |    | 127   | 98    | 225   |        |      |      |
| 10:30          |    |    | 352   | 408   | 760    | 22:30          |       |    | 106   | 94    | 200   |        |      |      |
| 10:45          |    |    | 355   | 1481  | 416    | 1512           | 22:45 |    | 78    | 453   | 96    | 433    | 174  | 886  |
| 11:00          |    |    | 366   | 389   | 755    | 23:00          |       |    | 52    | 61    | 113   |        |      |      |
| 11:15          |    |    | 363   | 441   | 804    | 23:15          |       |    | 57    | 61    | 118   |        |      |      |
| 11:30          |    |    | 349   | 453   | 802    | 23:30          |       |    | 41    | 57    | 98    |        |      |      |
| 11:45          |    |    | 382   | 1460  | 455    | 1738           | 23:45 |    | 36    | 186   | 36    | 215    | 72   | 401  |
| <b>TOTALS</b>  |    |    | 10916 | 9891  | 20807  | <b>TOTALS</b>  |       |    | 15838 | 16413 | 32251 |        |      |      |
| <b>SPLIT %</b> |    |    | 52.5% | 47.5% | 39.2%  | <b>SPLIT %</b> |       |    | 49.1% | 50.9% | 60.8% |        |      |      |

| DAILY TOTALS |  |  |  |  | NB     | SB |  |  |  |  |  | Total  |
|--------------|--|--|--|--|--------|----|--|--|--|--|--|--------|
|              |  |  |  |  | 0      | 0  |  |  |  |  |  | 53,058 |
|              |  |  |  |  | 26,754 |    |  |  |  |  |  | 26,304 |

|                 |       |       |       |       |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    |       |       | 7:45  | 11:45 | 7:45  | PM Peak Hour    |       |       | 17:00 | 15:45 | 17:00 |
| AM Pk Volume    |       |       | 2009  | 1819  | 3678  | PM Pk Volume    |       |       | 2050  | 1973  | 3998  |
| Pk Hr Factor    |       |       | 0.946 | 0.976 | 0.940 | Pk Hr Factor    |       |       | 0.954 | 0.954 | 0.947 |
| 7 - 9 Volume    | 0     | 0     | 3804  | 3139  | 6943  | 4 - 6 Volume    | 0     | 0     | 3987  | 3887  | 7874  |
| 7 - 9 Peak Hour |       |       | 7:45  | 7:30  | 7:45  | 4 - 6 Peak Hour |       |       | 17:00 | 16:30 | 17:00 |
| 7 - 9 Pk Volume | 0     | 0     | 2009  | 1733  | 3678  | 4 - 6 Pk Volume | 0     | 0     | 2050  | 1956  | 3998  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.946 | 0.952 | 0.940 | Pk Hr Factor    | 0.000 | 0.000 | 0.954 | 0.931 | 0.947 |

**VOLUME**

Imperial Hwy E/O Associated Rd

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1233\_014

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB     | WB     | Total  |       |       |      |     |      |
|----------------|----|----|-------|-------|-------|----------------|--------|--------|--------|-------|-------|------|-----|------|
|                |    |    |       |       | 0     | 0              | 26,549 | 24,435 | 50,984 |       |       |      |     |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB     | SB     | EB     | WB    | TOTAL |      |     |      |
| 0:00           |    |    | 31    | 23    | 54    | 12:00          |        |        | 390    | 434   | 824   |      |     |      |
| 0:15           |    |    | 26    | 22    | 48    | 12:15          |        |        | 434    | 435   | 869   |      |     |      |
| 0:30           |    |    | 28    | 19    | 47    | 12:30          |        |        | 414    | 427   | 841   |      |     |      |
| 0:45           |    |    | 13    | 98    | 11    | 75             | 12:45  |        | 464    | 1702  | 436   | 1732 | 900 | 3434 |
| 1:00           |    |    | 18    | 22    | 40    | 13:00          |        |        | 428    | 413   | 841   |      |     |      |
| 1:15           |    |    | 13    | 6     | 19    | 13:15          |        |        | 452    | 417   | 869   |      |     |      |
| 1:30           |    |    | 17    | 20    | 37    | 13:30          |        |        | 417    | 445   | 862   |      |     |      |
| 1:45           |    |    | 16    | 64    | 12    | 60             | 13:45  |        | 468    | 1765  | 388   | 1663 | 856 | 3428 |
| 2:00           |    |    | 14    | 15    | 29    | 14:00          |        |        | 431    | 400   | 831   |      |     |      |
| 2:15           |    |    | 11    | 13    | 24    | 14:15          |        |        | 395    | 424   | 819   |      |     |      |
| 2:30           |    |    | 16    | 10    | 26    | 14:30          |        |        | 408    | 438   | 846   |      |     |      |
| 2:45           |    |    | 22    | 63    | 10    | 48             | 14:45  |        | 394    | 1628  | 384   | 1646 | 778 | 3274 |
| 3:00           |    |    | 11    | 12    | 23    | 15:00          |        |        | 412    | 451   | 863   |      |     |      |
| 3:15           |    |    | 7     | 17    | 24    | 15:15          |        |        | 478    | 425   | 903   |      |     |      |
| 3:30           |    |    | 23    | 28    | 51    | 15:30          |        |        | 480    | 472   | 952   |      |     |      |
| 3:45           |    |    | 35    | 76    | 28    | 85             | 15:45  |        | 479    | 1849  | 472   | 1820 | 951 | 3669 |
| 4:00           |    |    | 31    | 38    | 69    | 16:00          |        |        | 472    | 454   | 926   |      |     |      |
| 4:15           |    |    | 31    | 39    | 70    | 16:15          |        |        | 488    | 449   | 937   |      |     |      |
| 4:30           |    |    | 89    | 68    | 157   | 16:30          |        |        | 478    | 488   | 966   |      |     |      |
| 4:45           |    |    | 141   | 292   | 64    | 209            | 16:45  |        | 502    | 1940  | 454   | 1845 | 956 | 3785 |
| 5:00           |    |    | 87    | 65    | 152   | 17:00          |        |        | 477    | 420   | 897   |      |     |      |
| 5:15           |    |    | 128   | 86    | 214   | 17:15          |        |        | 511    | 500   | 1011  |      |     |      |
| 5:30           |    |    | 164   | 143   | 307   | 17:30          |        |        | 506    | 496   | 1002  |      |     |      |
| 5:45           |    |    | 217   | 596   | 148   | 442            | 17:45  |        | 517    | 2011  | 456   | 1872 | 973 | 3883 |
| 6:00           |    |    | 238   | 187   | 425   | 18:00          |        |        | 462    | 425   | 887   |      |     |      |
| 6:15           |    |    | 245   | 183   | 428   | 18:15          |        |        | 468    | 422   | 890   |      |     |      |
| 6:30           |    |    | 372   | 235   | 607   | 18:30          |        |        | 410    | 366   | 776   |      |     |      |
| 6:45           |    |    | 402   | 1257  | 271   | 876            | 18:45  |        | 352    | 1692  | 333   | 1546 | 685 | 3238 |
| 7:00           |    |    | 422   | 303   | 725   | 19:00          |        |        | 357    | 325   | 682   |      |     |      |
| 7:15           |    |    | 420   | 330   | 750   | 19:15          |        |        | 342    | 332   | 674   |      |     |      |
| 7:30           |    |    | 423   | 384   | 807   | 19:30          |        |        | 285    | 291   | 576   |      |     |      |
| 7:45           |    |    | 514   | 1779  | 422   | 1439           | 19:45  |        | 267    | 1251  | 250   | 1198 | 517 | 2449 |
| 8:00           |    |    | 484   | 422   | 906   | 20:00          |        |        | 238    | 293   | 531   |      |     |      |
| 8:15           |    |    | 488   | 396   | 884   | 20:15          |        |        | 236    | 216   | 452   |      |     |      |
| 8:30           |    |    | 528   | 321   | 849   | 20:30          |        |        | 238    | 216   | 454   |      |     |      |
| 8:45           |    |    | 494   | 1994  | 322   | 1461           | 20:45  |        | 183    | 895   | 219   | 944  | 402 | 1839 |
| 9:00           |    |    | 425   | 275   | 700   | 21:00          |        |        | 146    | 209   | 355   |      |     |      |
| 9:15           |    |    | 351   | 294   | 645   | 21:15          |        |        | 161    | 191   | 352   |      |     |      |
| 9:30           |    |    | 356   | 267   | 623   | 21:30          |        |        | 125    | 139   | 264   |      |     |      |
| 9:45           |    |    | 346   | 1478  | 365   | 1201           | 21:45  |        | 112    | 544   | 139   | 678  | 251 | 1222 |
| 10:00          |    |    | 367   | 351   | 718   | 22:00          |        |        | 133    | 116   | 249   |      |     |      |
| 10:15          |    |    | 412   | 320   | 732   | 22:15          |        |        | 105    | 83    | 188   |      |     |      |
| 10:30          |    |    | 373   | 375   | 748   | 22:30          |        |        | 80     | 82    | 162   |      |     |      |
| 10:45          |    |    | 360   | 1512  | 418   | 1464           | 22:45  |        | 64     | 382   | 78    | 359  | 142 | 741  |
| 11:00          |    |    | 387   | 360   | 747   | 23:00          |        |        | 36     | 48    | 84    |      |     |      |
| 11:15          |    |    | 368   | 418   | 786   | 23:15          |        |        | 50     | 38    | 88    |      |     |      |
| 11:30          |    |    | 365   | 423   | 788   | 23:30          |        |        | 32     | 35    | 67    |      |     |      |
| 11:45          |    |    | 409   | 1529  | 428   | 1629           | 23:45  |        | 34     | 152   | 22    | 143  | 56  | 295  |
| <b>TOTALS</b>  |    |    | 10738 | 8989  | 19727 | <b>TOTALS</b>  |        |        | 15811  | 15446 | 31257 |      |     |      |
| <b>SPLIT %</b> |    |    | 54.4% | 45.6% | 38.7% | <b>SPLIT %</b> |        |        | 50.6%  | 49.4% | 61.3% |      |     |      |

| DAILY TOTALS    |       |       |       |       | NB    | SB              | EB     | WB     | Total  |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|--------|--------|--------|-------|-------|
|                 |       |       |       |       | 0     | 0               | 26,549 | 24,435 | 50,984 |       |       |
| AM Peak Hour    |       |       | 7:45  | 11:45 | 7:45  | PM Peak Hour    |        |        | 17:00  | 17:15 | 17:00 |
| AM Pk Volume    |       |       | 2014  | 1724  | 3575  | PM Pk Volume    |        |        | 2011   | 1877  | 3883  |
| Pk Hr Factor    |       |       | 0.954 | 0.991 | 0.955 | Pk Hr Factor    |        |        | 0.972  | 0.939 | 0.960 |
| 7 - 9 Volume    | 0     | 0     | 3773  | 2900  | 6673  | 4 - 6 Volume    | 0      | 0      | 3951   | 3717  | 7668  |
| 7 - 9 Peak Hour |       |       | 7:45  | 7:30  | 7:45  | 4 - 6 Peak Hour |        |        | 17:00  | 17:00 | 17:00 |
| 7 - 9 Pk Volume | 0     | 0     | 2014  | 1624  | 3575  | 4 - 6 Pk Volume | 0      | 0      | 2011   | 1872  | 3883  |
| Pk Hr Factor    | 0.000 | 0.000 | 0.954 | 0.962 | 0.955 | Pk Hr Factor    | 0.000  | 0.000  | 0.972  | 0.936 | 0.960 |

**VOLUME**

Imperial Hwy E/O Castlegate Ln/Placentia Ave

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1233\_015

| DAILY TOTALS   |    |    |       |       | NB           | SB             |        |    |       |        |              | Total  |     |      |
|----------------|----|----|-------|-------|--------------|----------------|--------|----|-------|--------|--------------|--------|-----|------|
|                |    |    |       |       | 0            | 0              |        |    |       |        |              | 51,154 |     |      |
|                |    |    |       |       |              |                | 26,188 |    |       | 24,966 |              |        |     |      |
| AM Period      | NB | SB | EB    | WB    | TOTAL        | PM Period      | NB     | SB | EB    | WB     | TOTAL        |        |     |      |
| 0:00           |    |    | 27    | 20    | 47           | 12:00          |        |    | 398   | 437    | 835          |        |     |      |
| 0:15           |    |    | 18    | 18    | 36           | 12:15          |        |    | 448   | 429    | 877          |        |     |      |
| 0:30           |    |    | 24    | 15    | 39           | 12:30          |        |    | 419   | 457    | 876          |        |     |      |
| 0:45           |    |    | 11    | 80    | 8            | 61             | 12:45  |    | 495   | 1760   | 415          | 1738   | 910 | 3498 |
| 1:00           |    |    | 11    | 19    | 30           | 13:00          |        |    | 450   | 421    | 871          |        |     |      |
| 1:15           |    |    | 16    | 3     | 19           | 13:15          |        |    | 464   | 428    | 892          |        |     |      |
| 1:30           |    |    | 13    | 18    | 31           | 13:30          |        |    | 434   | 464    | 898          |        |     |      |
| 1:45           |    |    | 17    | 57    | 13           | 53             | 13:45  |    | 456   | 1804   | 412          | 1725   | 868 | 3529 |
| 2:00           |    |    | 15    | 14    | 29           | 14:00          |        |    | 444   | 439    | 883          |        |     |      |
| 2:15           |    |    | 10    | 6     | 16           | 14:15          |        |    | 415   | 430    | 845          |        |     |      |
| 2:30           |    |    | 15    | 7     | 22           | 14:30          |        |    | 426   | 456    | 882          |        |     |      |
| 2:45           |    |    | 20    | 60    | 9            | 36             | 14:45  |    | 419   | 1704   | 399          | 1724   | 818 | 3428 |
| 3:00           |    |    | 10    | 12    | 22           | 15:00          |        |    | 447   | 434    | 881          |        |     |      |
| 3:15           |    |    | 7     | 14    | 21           | 15:15          |        |    | 485   | 448    | 933          |        |     |      |
| 3:30           |    |    | 21    | 30    | 51           | 15:30          |        |    | 491   | 478    | 969          |        |     |      |
| 3:45           |    |    | 31    | 69    | 25           | 81             | 15:45  |    | 500   | 1923   | 468          | 1828   | 968 | 3751 |
| 4:00           |    |    | 33    | 36    | 69           | 16:00          |        |    | 454   | 479    | 933          |        |     |      |
| 4:15           |    |    | 31    | 40    | 71           | 16:15          |        |    | 482   | 481    | 963          |        |     |      |
| 4:30           |    |    | 80    | 63    | 143          | 16:30          |        |    | 469   | 502    | 971          |        |     |      |
| 4:45           |    |    | 129   | 273   | 57           | 196            | 16:45  |    | 488   | 1893   | 462          | 1924   | 950 | 3817 |
| 5:00           |    |    | 78    | 62    | 140          | 17:00          |        |    | 472   | 491    | 963          |        |     |      |
| 5:15           |    |    | 114   | 72    | 186          | 17:15          |        |    | 511   | 523    | 1034         |        |     |      |
| 5:30           |    |    | 175   | 136   | 311          | 17:30          |        |    | 481   | 468    | 949          |        |     |      |
| 5:45           |    |    | 248   | 615   | 131          | 401            | 17:45  |    | 494   | 1958   | 466          | 1948   | 960 | 3906 |
| 6:00           |    |    | 231   | 191   | 422          | 18:00          |        |    | 431   | 445    | 876          |        |     |      |
| 6:15           |    |    | 227   | 164   | 391          | 18:15          |        |    | 438   | 452    | 890          |        |     |      |
| 6:30           |    |    | 331   | 236   | 567          | 18:30          |        |    | 450   | 422    | 872          |        |     |      |
| 6:45           |    |    | 403   | 1192  | 295          | 886            | 18:45  |    | 334   | 1653   | 331          | 1650   | 665 | 3303 |
| 7:00           |    |    | 388   | 315   | 703          | 19:00          |        |    | 342   | 341    | 683          |        |     |      |
| 7:15           |    |    | 391   | 327   | 718          | 19:15          |        |    | 324   | 338    | 662          |        |     |      |
| 7:30           |    |    | 406   | 347   | 753          | 19:30          |        |    | 266   | 304    | 570          |        |     |      |
| 7:45           |    |    | 467   | 1652  | 428          | 1417           | 19:45  |    | 258   | 1190   | 260          | 1243   | 518 | 2433 |
| 8:00           |    |    | 444   | 399   | 843          | 20:00          |        |    | 236   | 307    | 543          |        |     |      |
| 8:15           |    |    | 426   | 373   | 799          | 20:15          |        |    | 213   | 251    | 464          |        |     |      |
| 8:30           |    |    | 491   | 329   | 820          | 20:30          |        |    | 213   | 221    | 434          |        |     |      |
| 8:45           |    |    | 465   | 1826  | 332          | 1433           | 20:45  |    | 162   | 824    | 227          | 1006   | 389 | 1830 |
| 9:00           |    |    | 411   | 325   | 736          | 21:00          |        |    | 121   | 228    | 349          |        |     |      |
| 9:15           |    |    | 364   | 312   | 676          | 21:15          |        |    | 143   | 197    | 340          |        |     |      |
| 9:30           |    |    | 393   | 271   | 664          | 21:30          |        |    | 107   | 151    | 258          |        |     |      |
| 9:45           |    |    | 376   | 1544  | 368          | 1276           | 21:45  |    | 106   | 477    | 141          | 717    | 247 | 1194 |
| 10:00          |    |    | 381   | 355   | 736          | 22:00          |        |    | 103   | 106    | 209          |        |     |      |
| 10:15          |    |    | 418   | 315   | 733          | 22:15          |        |    | 85    | 91     | 176          |        |     |      |
| 10:30          |    |    | 380   | 381   | 761          | 22:30          |        |    | 68    | 80     | 148          |        |     |      |
| 10:45          |    |    | 376   | 1555  | 413          | 1464           | 22:45  |    | 49    | 305    | 73           | 350    | 122 | 655  |
| 11:00          |    |    | 384   | 378   | 762          | 23:00          |        |    | 35    | 52     | 87           |        |     |      |
| 11:15          |    |    | 411   | 411   | 822          | 23:15          |        |    | 48    | 40     | 88           |        |     |      |
| 11:30          |    |    | 393   | 432   | 825          | 23:30          |        |    | 32    | 34     | 66           |        |     |      |
| 11:45          |    |    | 440   | 1628  | 439          | 1660           | 23:45  |    | 31    | 146    | 23           | 149    | 54  | 295  |
| <b>TOTALS</b>  |    |    | 10551 | 8964  | 19515        | <b>TOTALS</b>  |        |    | 15637 | 16002  | <b>31639</b> |        |     |      |
| <b>SPLIT %</b> |    |    | 54.1% | 45.9% | <b>38.1%</b> | <b>SPLIT %</b> |        |    | 49.4% | 50.6%  | <b>61.9%</b> |        |     |      |

| DAILY TOTALS    |       |       |       |       | NB    | SB              |        |       |       |        |       | Total  |
|-----------------|-------|-------|-------|-------|-------|-----------------|--------|-------|-------|--------|-------|--------|
|                 |       |       |       |       | 0     | 0               |        |       |       |        |       | 51,154 |
|                 |       |       |       |       |       |                 | 26,188 |       |       | 24,966 |       |        |
| AM Peak Hour    |       |       | 7:45  | 11:45 | 11:45 | PM Peak Hour    |        |       | 17:00 | 16:30  | 16:30 |        |
| AM Pk Volume    |       |       | 1828  | 1762  | 3467  | PM Pk Volume    |        |       | 1958  | 1978   | 3918  |        |
| Pk Hr Factor    |       |       | 0.931 | 0.964 | 0.986 | Pk Hr Factor    |        |       | 0.958 | 0.946  | 0.947 |        |
| 7 - 9 Volume    | 0     | 0     | 3478  | 2850  | 6328  | 4 - 6 Volume    | 0      | 0     | 3851  | 3872   | 7723  |        |
| 7 - 9 Peak Hour |       |       | 7:45  | 7:30  | 7:45  | 4 - 6 Peak Hour |        |       | 17:00 | 16:30  | 16:30 |        |
| 7 - 9 Pk Volume | 0     | 0     | 1828  | 1547  | 3357  | 4 - 6 Pk Volume | 0      | 0     | 1958  | 1978   | 3918  |        |
| Pk Hr Factor    | 0.000 | 0.000 | 0.931 | 0.904 | 0.938 | Pk Hr Factor    | 0.000  | 0.000 | 0.958 | 0.946  | 0.947 |        |

**VOLUME**

Kraemer Blvd S/O Imperial Hwy

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1232\_016

| DAILY TOTALS   |              |              |     |     | NB           | SB             | EB           | WB           | Total  |     |              |
|----------------|--------------|--------------|-----|-----|--------------|----------------|--------------|--------------|--------|-----|--------------|
|                |              |              |     |     | 9,387        | 10,302         | 0            | 0            | 19,689 |     |              |
| AM Period      | NB           | SB           | EB  | WB  | TOTAL        | PM Period      | NB           | SB           | EB     | WB  | TOTAL        |
| 00:00          | 2            | 10           |     |     | 12           | 12:00          | 163          | 209          |        |     | 372          |
| 00:15          | 6            | 6            |     |     | 12           | 12:15          | 202          | 141          |        |     | 343          |
| 00:30          | 1            | 7            |     |     | 8            | 12:30          | 199          | 176          |        |     | 375          |
| 00:45          | 3            | 12           | 3   | 26  | 6            | 12:45          | 211          | 775          | 164    | 690 | 375          |
| 01:00          | 0            | 2            |     |     | 2            | 13:00          | 194          | 154          |        |     | 348          |
| 01:15          | 1            | 1            |     |     | 2            | 13:15          | 163          | 173          |        |     | 336          |
| 01:30          | 2            | 1            |     |     | 3            | 13:30          | 174          | 164          |        |     | 338          |
| 01:45          | 1            | 4            | 2   | 6   | 3            | 13:45          | 165          | 696          | 166    | 657 | 331          |
| 02:00          | 2            | 6            |     |     | 8            | 14:00          | 140          | 179          |        |     | 319          |
| 02:15          | 0            | 4            |     |     | 4            | 14:15          | 171          | 170          |        |     | 341          |
| 02:30          | 0            | 1            |     |     | 1            | 14:30          | 186          | 162          |        |     | 348          |
| 02:45          | 3            | 5            | 2   | 13  | 5            | 14:45          | 158          | 655          | 213    | 724 | 371          |
| 03:00          | 2            | 0            |     |     | 2            | 15:00          | 206          | 198          |        |     | 404          |
| 03:15          | 4            | 2            |     |     | 6            | 15:15          | 189          | 189          |        |     | 378          |
| 03:30          | 6            | 4            |     |     | 10           | 15:30          | 186          | 227          |        |     | 413          |
| 03:45          | 8            | 20           | 1   | 7   | 9            | 15:45          | 194          | 775          | 213    | 827 | 407          |
| 04:00          | 9            | 5            |     |     | 14           | 16:00          | 166          | 247          |        |     | 413          |
| 04:15          | 5            | 2            |     |     | 7            | 16:15          | 178          | 204          |        |     | 382          |
| 04:30          | 17           | 7            |     |     | 24           | 16:30          | 257          | 248          |        |     | 505          |
| 04:45          | 29           | 60           | 8   | 22  | 37           | 16:45          | 189          | 790          | 238    | 937 | 427          |
| 05:00          | 14           | 5            |     |     | 19           | 17:00          | 187          | 288          |        |     | 475          |
| 05:15          | 20           | 20           |     |     | 40           | 17:15          | 197          | 259          |        |     | 456          |
| 05:30          | 39           | 25           |     |     | 64           | 17:30          | 179          | 238          |        |     | 417          |
| 05:45          | 67           | 140          | 54  | 104 | 121          | 17:45          | 181          | 744          | 206    | 991 | 387          |
| 06:00          | 55           | 67           |     |     | 122          | 18:00          | 141          | 208          |        |     | 349          |
| 06:15          | 53           | 99           |     |     | 152          | 18:15          | 151          | 192          |        |     | 343          |
| 06:30          | 76           | 141          |     |     | 217          | 18:30          | 127          | 163          |        |     | 290          |
| 06:45          | 118          | 302          | 151 | 458 | 269          | 18:45          | 115          | 534          | 140    | 703 | 255          |
| 07:00          | 107          | 197          |     |     | 304          | 19:00          | 77           | 134          |        |     | 211          |
| 07:15          | 113          | 215          |     |     | 328          | 19:15          | 100          | 114          |        |     | 214          |
| 07:30          | 132          | 277          |     |     | 409          | 19:30          | 61           | 102          |        |     | 163          |
| 07:45          | 243          | 595          | 177 | 866 | 420          | 19:45          | 69           | 307          | 94     | 444 | 163          |
| 08:00          | 186          | 141          |     |     | 327          | 20:00          | 76           | 86           |        |     | 162          |
| 08:15          | 170          | 147          |     |     | 317          | 20:15          | 54           | 80           |        |     | 134          |
| 08:30          | 180          | 153          |     |     | 333          | 20:30          | 44           | 71           |        |     | 115          |
| 08:45          | 176          | 712          | 138 | 579 | 314          | 20:45          | 38           | 212          | 68     | 305 | 106          |
| 09:00          | 178          | 124          |     |     | 302          | 21:00          | 39           | 85           |        |     | 124          |
| 09:15          | 147          | 121          |     |     | 268          | 21:15          | 35           | 61           |        |     | 96           |
| 09:30          | 131          | 113          |     |     | 244          | 21:30          | 28           | 37           |        |     | 65           |
| 09:45          | 152          | 608          | 117 | 475 | 269          | 21:45          | 32           | 134          | 29     | 212 | 61           |
| 10:00          | 141          | 133          |     |     | 274          | 22:00          | 15           | 35           |        |     | 50           |
| 10:15          | 144          | 110          |     |     | 254          | 22:15          | 15           | 27           |        |     | 42           |
| 10:30          | 127          | 110          |     |     | 237          | 22:30          | 11           | 29           |        |     | 40           |
| 10:45          | 148          | 560          | 124 | 477 | 272          | 22:45          | 10           | 51           | 20     | 111 | 30           |
| 11:00          | 170          | 144          |     |     | 314          | 23:00          | 12           | 28           |        |     | 40           |
| 11:15          | 150          | 142          |     |     | 292          | 23:15          | 10           | 13           |        |     | 23           |
| 11:30          | 157          | 164          |     |     | 321          | 23:30          | 8            | 10           |        |     | 18           |
| 11:45          | 183          | 660          | 158 | 608 | 341          | 23:45          | 6            | 36           | 9      | 60  | 15           |
| <b>TOTALS</b>  | <b>3678</b>  | <b>3641</b>  |     |     | <b>7319</b>  | <b>TOTALS</b>  | <b>5709</b>  | <b>6661</b>  |        |     | <b>12370</b> |
| <b>SPLIT %</b> | <b>50.3%</b> | <b>49.7%</b> |     |     | <b>37.2%</b> | <b>SPLIT %</b> | <b>46.2%</b> | <b>53.8%</b> |        |     | <b>62.8%</b> |

| DAILY TOTALS    |       |       |       |       | NB              | SB              | EB    | WB    | Total  |       |       |
|-----------------|-------|-------|-------|-------|-----------------|-----------------|-------|-------|--------|-------|-------|
|                 |       |       |       |       | 9,387           | 10,302          | 0     | 0     | 19,689 |       |       |
| AM Peak Hour    | 07:45 | 07:00 |       | 07:15 | PM Peak Hour    | 16:30           | 16:30 |       | 16:30  |       |       |
| AM Pk Volume    | 779   | 866   |       | 1484  | PM Pk Volume    | 830             | 1033  |       | 1863   |       |       |
| Pk Hr Factor    | 0.801 | 0.782 |       | 0.883 | Pk Hr Factor    | 0.807           | 0.897 |       | 0.922  |       |       |
| 7 - 9 Volume    | 1307  | 1445  | 0     | 0     | 2752            | 4 - 6 Volume    | 1534  | 1928  | 0      | 0     | 3462  |
| 7 - 9 Peak Hour | 07:45 | 07:00 |       | 07:15 | 4 - 6 Peak Hour | 16:30           | 16:30 |       |        |       | 16:30 |
| 7 - 9 Pk Volume | 779   | 866   | 0     | 0     | 1484            | 4 - 6 Pk Volume | 830   | 1033  | 0      | 0     | 1863  |
| Pk Hr Factor    | 0.801 | 0.782 | 0.000 | 0.000 | 0.883           | Pk Hr Factor    | 0.807 | 0.897 | 0.000  | 0.000 | 0.922 |

**VOLUME**

Valencia Ave S/O Imperial Hwy

Day: Tuesday  
Date: 11/13/2018

City: Brea  
Project #: CA18\_1232\_017

| DAILY TOTALS   |              |              |     |     | NB           | SB             | EB           | WB           | Total |     |              |
|----------------|--------------|--------------|-----|-----|--------------|----------------|--------------|--------------|-------|-----|--------------|
|                |              |              |     |     | 4,701        | 5,146          | 0            | 0            | 9,847 |     |              |
| AM Period      | NB           | SB           | EB  | WB  | TOTAL        | PM Period      | NB           | SB           | EB    | WB  | TOTAL        |
| 00:00          | 6            | 8            |     |     | 14           | 12:00          | 81           | 92           |       |     | 173          |
| 00:15          | 2            | 5            |     |     | 7            | 12:15          | 74           | 87           |       |     | 161          |
| 00:30          | 5            | 2            |     |     | 7            | 12:30          | 68           | 70           |       |     | 138          |
| 00:45          | 1            | 14           | 3   | 18  | 4            | 12:45          | 71           | 294          | 67    | 316 | 138          |
| 01:00          | 0            | 1            |     |     | 1            | 13:00          | 80           | 82           |       |     | 162          |
| 01:15          | 2            | 0            |     |     | 2            | 13:15          | 64           | 73           |       |     | 137          |
| 01:30          | 0            | 2            |     |     | 2            | 13:30          | 71           | 82           |       |     | 153          |
| 01:45          | 4            | 6            | 2   | 5   | 6            | 13:45          | 78           | 293          | 84    | 321 | 162          |
| 02:00          | 0            | 0            |     |     | 0            | 14:00          | 75           | 87           |       |     | 162          |
| 02:15          | 2            | 0            |     |     | 2            | 14:15          | 95           | 65           |       |     | 160          |
| 02:30          | 1            | 0            |     |     | 1            | 14:30          | 86           | 86           |       |     | 172          |
| 02:45          | 0            | 3            | 1   | 1   | 1            | 14:45          | 84           | 340          | 71    | 309 | 155          |
| 03:00          | 2            | 0            |     |     | 2            | 15:00          | 89           | 73           |       |     | 162          |
| 03:15          | 1            | 0            |     |     | 1            | 15:15          | 69           | 84           |       |     | 153          |
| 03:30          | 0            | 1            |     |     | 1            | 15:30          | 96           | 97           |       |     | 193          |
| 03:45          | 6            | 9            | 2   | 3   | 8            | 15:45          | 102          | 356          | 75    | 329 | 177          |
| 04:00          | 3            | 4            |     |     | 7            | 16:00          | 83           | 90           |       |     | 173          |
| 04:15          | 1            | 5            |     |     | 6            | 16:15          | 80           | 93           |       |     | 173          |
| 04:30          | 7            | 8            |     |     | 15           | 16:30          | 96           | 122          |       |     | 218          |
| 04:45          | 11           | 22           | 10  | 27  | 21           | 16:45          | 89           | 348          | 98    | 403 | 187          |
| 05:00          | 7            | 8            |     |     | 15           | 17:00          | 121          | 143          |       |     | 264          |
| 05:15          | 11           | 17           |     |     | 28           | 17:15          | 112          | 111          |       |     | 223          |
| 05:30          | 20           | 30           |     |     | 50           | 17:30          | 115          | 116          |       |     | 231          |
| 05:45          | 35           | 73           | 37  | 92  | 72           | 17:45          | 72           | 420          | 80    | 450 | 152          |
| 06:00          | 33           | 60           |     |     | 93           | 18:00          | 70           | 89           |       |     | 159          |
| 06:15          | 43           | 58           |     |     | 101          | 18:15          | 69           | 77           |       |     | 146          |
| 06:30          | 59           | 79           |     |     | 138          | 18:30          | 84           | 73           |       |     | 157          |
| 06:45          | 86           | 221          | 83  | 280 | 169          | 18:45          | 62           | 285          | 50    | 289 | 112          |
| 07:00          | 60           | 99           |     |     | 159          | 19:00          | 63           | 67           |       |     | 130          |
| 07:15          | 73           | 94           |     |     | 167          | 19:15          | 46           | 49           |       |     | 95           |
| 07:30          | 111          | 127          |     |     | 238          | 19:30          | 47           | 47           |       |     | 94           |
| 07:45          | 120          | 364          | 107 | 427 | 227          | 19:45          | 38           | 194          | 45    | 208 | 83           |
| 08:00          | 89           | 106          |     |     | 195          | 20:00          | 37           | 67           |       |     | 104          |
| 08:15          | 83           | 110          |     |     | 193          | 20:15          | 44           | 32           |       |     | 76           |
| 08:30          | 66           | 92           |     |     | 158          | 20:30          | 30           | 33           |       |     | 63           |
| 08:45          | 97           | 335          | 113 | 421 | 210          | 20:45          | 25           | 136          | 28    | 160 | 53           |
| 09:00          | 63           | 93           |     |     | 156          | 21:00          | 24           | 28           |       |     | 52           |
| 09:15          | 74           | 74           |     |     | 148          | 21:15          | 28           | 28           |       |     | 56           |
| 09:30          | 61           | 77           |     |     | 138          | 21:30          | 16           | 28           |       |     | 44           |
| 09:45          | 70           | 268          | 64  | 308 | 134          | 21:45          | 11           | 79           | 25    | 109 | 36           |
| 10:00          | 60           | 62           |     |     | 122          | 22:00          | 13           | 27           |       |     | 40           |
| 10:15          | 65           | 77           |     |     | 142          | 22:15          | 9            | 10           |       |     | 19           |
| 10:30          | 63           | 64           |     |     | 127          | 22:30          | 17           | 8            |       |     | 25           |
| 10:45          | 63           | 251          | 52  | 255 | 115          | 22:45          | 7            | 46           | 7     | 52  | 14           |
| 11:00          | 77           | 78           |     |     | 155          | 23:00          | 6            | 10           |       |     | 16           |
| 11:15          | 88           | 79           |     |     | 167          | 23:15          | 8            | 7            |       |     | 15           |
| 11:30          | 57           | 91           |     |     | 148          | 23:30          | 3            | 4            |       |     | 7            |
| 11:45          | 100          | 322          | 90  | 338 | 190          | 23:45          | 5            | 22           | 4     | 25  | 9            |
| <b>TOTALS</b>  | <b>1888</b>  | <b>2175</b>  |     |     | <b>4063</b>  | <b>TOTALS</b>  | <b>2813</b>  | <b>2971</b>  |       |     | <b>5784</b>  |
| <b>SPLIT %</b> | <b>46.5%</b> | <b>53.5%</b> |     |     | <b>41.3%</b> | <b>SPLIT %</b> | <b>48.6%</b> | <b>51.4%</b> |       |     | <b>58.7%</b> |

| DAILY TOTALS |  |  |  |  | NB    | SB    | EB | WB | Total |
|--------------|--|--|--|--|-------|-------|----|----|-------|
|              |  |  |  |  | 4,701 | 5,146 | 0  | 0  | 9,847 |

|                 |       |       |       |       |       |                 |       |       |       |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
| AM Peak Hour    | 07:30 | 07:30 |       |       | 07:30 | PM Peak Hour    | 16:45 | 16:30 |       |       | 16:45 |
| AM Pk Volume    | 403   | 450   |       |       | 853   | PM Pk Volume    | 437   | 474   |       |       | 905   |
| Pk Hr Factor    | 0.840 | 0.886 |       |       | 0.896 | Pk Hr Factor    | 0.903 | 0.829 |       |       | 0.857 |
| 7 - 9 Volume    | 699   | 848   | 0     | 0     | 1547  | 4 - 6 Volume    | 768   | 853   | 0     | 0     | 1621  |
| 7 - 9 Peak Hour | 07:30 | 07:30 |       |       | 07:30 | 4 - 6 Peak Hour | 16:45 | 16:30 |       |       | 16:45 |
| 7 - 9 Pk Volume | 403   | 450   | 0     | 0     | 853   | 4 - 6 Pk Volume | 437   | 474   | 0     | 0     | 905   |
| Pk Hr Factor    | 0.840 | 0.886 | 0.000 | 0.000 | 0.896 | Pk Hr Factor    | 0.903 | 0.829 | 0.000 | 0.000 | 0.857 |

## APPENDIX C

### INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS – ICU



*APPENDIX C-1*

**EXISTING TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.684 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐                     |        |        | ⇐⇐⇐                     |        |        | ⇐⇐⇐⇐⇐        |        |        | ⇐⇐⇐⇐⇐        |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 147                     | 187    | 129    | 840                     | 564    | 8      | 13           | 1185   | 191    | 417          | 1476   | 519    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 147                     | 187    | 129    | 840                     | 564    | 8      | 13           | 1185   | 191    | 417          | 1476   | 519    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 37                      | 47     | 32     | 210                     | 141    | 2      | 3            | 296    | 48     | 104          | 369    | 130    |
| Total Analysis Volume [veh/h]           | 147                     | 187    | 129    | 840                     | 564    | 8      | 13           | 1185   | 191    | 417          | 1476   | 519    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.06 | 0.06 | 0.25 | 0.17 | 0.17 | 0.00 | 0.20 | 0.20 | 0.12 | 0.29 | 0.06 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.684 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.729 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐            |        |        | ⇐            |        |        | ⇐            |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1              | 0      | 1      | 0            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 997            | 0      | 498    | 0            | 1611   | 549    | 211          | 1968   | 0      |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 997            | 0      | 498    | 0            | 1611   | 549    | 211          | 1968   | 0      |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 249            | 0      | 125    | 0            | 403    | 137    | 53           | 492    | 0      |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 997            | 0      | 498    | 0            | 1611   | 549    | 211          | 1968   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.29 | 0.00 | 0.29 | 0.00 | 0.32 | 0.32 | 0.06 | 0.39 | 0.00 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.729 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.798 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐            |        |        |                |        |        | ⇐            |        |        | ⇐            |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 0      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 989            | 0      | 468    | 0              | 0      | 0      | 267          | 2331   | 0      | 0            | 1201   | 461    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 989            | 0      | 468    | 0              | 0      | 0      | 267          | 2331   | 0      | 0            | 1201   | 461    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 247            | 0      | 117    | 0              | 0      | 0      | 67           | 583    | 0      | 0            | 300    | 115    |
| Total Analysis Volume [veh/h]           | 989            | 0      | 468    | 0              | 0      | 0      | 267          | 2331   | 0      | 0            | 1201   | 461    |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|-------|---------|-------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 3     | 0       | 0     | 0       | 0       | 0       | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |         |       |         |         |         |          |         |         |         |         |         |
| Lead / Lag              | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.29  | 0.00 | 0.28 | 0.00 | 0.00 | 0.00 | 0.08 | 0.46 | 0.00 | 0.00 | 0.24 | 0.24 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.798 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.560 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | +            |        |        | +            |        |        | +            |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 8            | 7      | 6      | 42           | 1      | 85     | 459          | 2114   | 35     | 15           | 1578   | 145    |
| Base Volume Adjustment Factor           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 8            | 7      | 6      | 42           | 1      | 85     | 459          | 2114   | 35     | 15           | 1578   | 145    |
| Peak Hour Factor                        | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 2            | 2      | 2      | 11           | 0      | 21     | 115          | 529    | 9      | 4            | 395    | 36     |
| Total Analysis Volume [veh/h]           | 8            | 7      | 6      | 42           | 1      | 85     | 459          | 2114   | 35     | 15           | 1578   | 145    |
| Pedestrian Volume [ped/h]               | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.14 | 0.42 | 0.42 | 0.01 | 0.34 | 0.34 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.560 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.671 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 137               | 268    | 10     | 104         | 182    | 339    | 417          | 1659   | 140    | 19           | 1195   | 153    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 137               | 268    | 10     | 104         | 182    | 339    | 417          | 1659   | 140    | 19           | 1195   | 153    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 34                | 67     | 3      | 26          | 46     | 85     | 104          | 415    | 35     | 5            | 299    | 38     |
| Total Analysis Volume [veh/h]           | 137               | 268    | 10     | 104         | 182    | 339    | 417          | 1659   | 140    | 19           | 1195   | 153    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.08 | 0.08 | 0.06 | 0.15 | 0.15 | 0.12 | 0.33 | 0.08 | 0.01 | 0.26 | 0.26 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.671 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.602 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 277               | 107    | 30     | 18            | 204    | 308    | 92           | 614    | 1008   | 253          | 691    | 12     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 277               | 107    | 30     | 18            | 204    | 308    | 92           | 614    | 1008   | 253          | 691    | 12     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 69                | 27     | 8      | 5             | 51     | 77     | 23           | 154    | 252    | 63           | 173    | 3      |
| Total Analysis Volume [veh/h]           | 277               | 107    | 30     | 18            | 204    | 308    | 92           | 614    | 1008   | 253          | 691    | 12     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.06 | 0.00 | 0.01 | 0.12 | 0.18 | 0.05 | 0.18 | 0.22 | 0.07 | 0.14 | 0.14 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.602 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.291 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 40               | 5      | 16     | 4                | 0      | 5      | 6            | 654    | 43     | 22           | 932    | 2      |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 40               | 5      | 16     | 4                | 0      | 5      | 6            | 654    | 43     | 22           | 932    | 2      |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 10               | 1      | 4      | 1                | 0      | 1      | 2            | 164    | 11     | 6            | 233    | 1      |
| Total Analysis Volume [veh/h]           | 40               | 5      | 16     | 4                | 0      | 5      | 6            | 654    | 43     | 22           | 932    | 2      |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.21 | 0.21 | 0.01 | 0.18 | 0.18 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.291 |      |      |      |      |      |      |      |      |      |      |      |

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.861
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 69 Level Of Service: D
\*\*\*\*\*

Street Name: Valencia Ave Lambert Rd/Carbon Canyon Rd
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected
Rights: Ignore Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 0 2 0 1 1 0 1 1 0 1 0 2 0 2 1 0

Volume Module:
Base Vol: 264 173 132 7 352 38 44 148 488 862 658 2
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 264 173 132 7 352 38 44 148 488 862 658 2
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 264 173 132 7 352 38 44 148 488 862 658 2
User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 264 173 0 7 352 38 44 148 488 862 658 2
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 264 173 0 7 352 38 44 148 488 862 658 2
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 264 173 0 7 352 38 44 148 488 862 658 2

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 2.00 1.00 1.00 1.81 0.19 1.00 2.00 1.00 2.00 2.99 0.01
Final Sat.: 1700 3400 1700 1700 3069 331 1700 3400 1700 3400 5085 15

Capacity Analysis Module:
Vol/Sat: 0.16 0.05 0.00 0.00 0.11 0.11 0.03 0.04 0.29 0.25 0.13 0.13
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*
\*\*\*\*\*



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.515 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ⤴             |        |        | ⤵                  |        |        | ⤵                  |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name                                    | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Base Volume Input [veh/h]               | 4             | 1      | 1      | 0             | 0      | 22     | 13                 | 294    | 7      | 6                  | 1542   | 4      |
| Base Volume Adjustment Factor           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                    | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]             | 4             | 1      | 1      | 0             | 0      | 22     | 13                 | 294    | 7      | 6                  | 1542   | 4      |
| Peak Hour Factor                        | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1             | 0      | 0      | 0             | 0      | 6      | 3                  | 74     | 2      | 2                  | 386    | 1      |
| Total Analysis Volume [veh/h]           | 4             | 1      | 1      | 0             | 0      | 22     | 13                 | 294    | 7      | 6                  | 1542   | 4      |
| Pedestrian Volume [ped/h]               | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]             | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.09 | 0.09 | 0.00 | 0.45 | 0.00 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.515 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.474 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | [Diagram]               |        |        | [Diagram]               |        |        | [Diagram]    |        |        | [Diagram]    |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 73                      | 115    | 93     | 610                     | 755    | 141    | 72           | 487    | 46     | 74           | 540    | 265    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 73                      | 115    | 93     | 610                     | 755    | 141    | 72           | 487    | 46     | 74           | 540    | 265    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 18                      | 29     | 23     | 153                     | 189    | 35     | 18           | 122    | 12     | 19           | 135    | 66     |
| Total Analysis Volume [veh/h]           | 73                      | 115    | 93     | 610                     | 755    | 141    | 72           | 487    | 46     | 74           | 540    | 265    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.03 | 0.05 | 0.18 | 0.22 | 0.08 | 0.02 | 0.14 | 0.03 | 0.02 | 0.16 | 0.16 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.474 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.603 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇌⇌⇌               |        |        | ⇌                 |        |        | ⇌⇌           |        |        | ⇌⇌⇌          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 228               | 6      | 298    | 53                | 28     | 8      | 2            | 883    | 294    | 332          | 724    | 10     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 228               | 6      | 298    | 53                | 28     | 8      | 2            | 883    | 294    | 332          | 724    | 10     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 57                | 2      | 75     | 13                | 7      | 2      | 1            | 221    | 74     | 83           | 181    | 3      |
| Total Analysis Volume [veh/h]           | 228               | 6      | 298    | 53                | 28     | 8      | 2            | 883    | 294    | 332          | 724    | 10     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.00 | 0.08 | 0.03 | 0.02 | 0.02 | 0.00 | 0.35 | 0.35 | 0.10 | 0.22 | 0.22 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.603 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.529 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1                 | 1      | 1      | 38                | 1      | 109    | 77           | 203    | 4      | 2            | 174    | 20     |
| Total Analysis Volume [veh/h]           | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.09 | 0.00 | 0.08 | 0.18 | 0.24 | 0.24 | 0.00 | 0.20 | 0.05 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.529 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.542 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 130               | 209    | 89     | 427               | 958    | 171    | 36           | 533    | 335    | 60           | 411    | 209    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 130               | 209    | 89     | 427               | 958    | 171    | 36           | 533    | 335    | 60           | 411    | 209    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 33                | 52     | 22     | 107               | 240    | 43     | 9            | 133    | 84     | 15           | 103    | 52     |
| Total Analysis Volume [veh/h]           | 130               | 209    | 89     | 427               | 958    | 171    | 36           | 533    | 335    | 60           | 411    | 209    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.06 | 0.06 | 0.13 | 0.22 | 0.22 | 0.02 | 0.16 | 0.20 | 0.04 | 0.12 | 0.12 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.542 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.731 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 130             | 196    | 13     | 718             | 755    | 243    | 60           | 418    | 130    | 12         | 340    | 305    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 130             | 196    | 13     | 718             | 755    | 243    | 60           | 418    | 130    | 12         | 340    | 305    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 33              | 49     | 3      | 180             | 189    | 61     | 15           | 105    | 33     | 3          | 85     | 76     |
| Total Analysis Volume [veh/h]           | 130             | 196    | 13     | 718             | 755    | 243    | 60           | 418    | 130    | 12         | 340    | 305    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |




**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.06 | 0.06 | 0.42 | 0.29 | 0.29 | 0.02 | 0.16 | 0.16 | 0.01 | 0.10 | 0.18 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.731 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.787 |

**Intersection Setup**

| Name                         | Rose Drive  |        | Rose Drive   |        | Vesuvius Drive  |        |
|------------------------------|---|--------|--|--------|---|--------|
| Approach                     | Northbound  |        | Southbound   |        | Eastbound   |        |
| Lane Configuration           |  |        |  |        |  |        |
| Turning Movement             | Left  | Thru   | Thru   | Right  | Left  | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00  | 12.00   | 12.00  |
| No. of Lanes in Entry Pocket | 0   | 1      | 0  | 1      | 0   | 0      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00   | 100.00 | 100.00  | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0  | 0      | 0   | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   |
| Speed [mph]                  | 30.00   |        | 30.00  |        | 30.00   |        |
| Grade [%]                    | 0.00  |        | 0.00   |        | 0.00  |        |
| Crosswalk                    | Yes   |        | No   |        | Yes   |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
| Base Volume Input [veh/h]               | 10         | 665    | 1202       | 10     | 8              | 33     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]             | 10         | 665    | 1202       | 10     | 8              | 33     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3          | 166    | 301        | 3      | 2              | 8      |
| Total Analysis Volume [veh/h]           | 10         | 665    | 1202       | 10     | 8              | 33     |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0              |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |            |            |            |            |            |            |
|-------------------------|------------|------------|------------|------------|------------|------------|
| Control Type            | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |            |            |            |            |            |            |
| Lead / Lag              | -          | -          | -          | -          | Lead       | -          |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.39 | 0.71 | 0.01 | 0.00 | 0.02 |
| Intersection LOS        | C     |      |      |      |      |      |
| Intersection V/C        | 0.787 |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.558 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ↵↵↵              |        |        | ↵                |        |        | ↵         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |        |        |        |
|---|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 558              | 0      | 445    | 0                | 1366   | 619    | 0      | 1589   | 174    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00   | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 558              | 0      | 445    | 0                | 1366   | 619    | 0      | 1589   | 174    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 140              | 0      | 111    | 0                | 342    | 155    | 0      | 397    | 44     |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 558              | 0      | 445    | 0                | 1366   | 619    | 0      | 1589   | 174    |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.16 | 0.00 | 0.20 | 0.00 | 0.27 | 0.00 | 0.00 | 0.31 | 0.00 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.558 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.571 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 803            | 43     | 761    | 0               | 0      | 50     | 116              | 1241   | 515    | 0                | 1355   | 18     |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 803            | 43     | 761    | 0               | 0      | 50     | 116              | 1241   | 515    | 0                | 1355   | 18     |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 201            | 11     | 190    | 0               | 0      | 13     | 29               | 310    | 129    | 0                | 339    | 5      |
| Total Analysis Volume [veh/h]           | 803            | 43     | 761    | 0               | 0      | 50     | 116              | 1241   | 515    | 0                | 1355   | 18     |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag              | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.16  | 0.24 | 0.24 | 0.00 | 0.00 | 0.01 | 0.07 | 0.24 | 0.00 | 0.00 | 0.20 | 0.20 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.571 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.691 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 140                | 198    | 68     | 142                | 314    | 139    | 142              | 1758   | 95     | 88               | 1505   | 80     |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 140                | 198    | 68     | 142                | 314    | 139    | 142              | 1758   | 95     | 88               | 1505   | 80     |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 35                 | 50     | 17     | 36                 | 79     | 35     | 36               | 440    | 24     | 22               | 376    | 20     |
| Total Analysis Volume [veh/h]           | 140                | 198    | 68     | 142                | 314    | 139    | 142              | 1758   | 95     | 88               | 1505   | 80     |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.08 | 0.08 | 0.04 | 0.18 | 0.08 | 0.08 | 0.36 | 0.36 | 0.05 | 0.23 | 0.23 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.691 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.590 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐              |        |        | ⇐⇐              |        |        | ⇐⇐⇐⇐⇐            |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 163              | 11     | 138    | 24              | 27     | 13     | 12               | 1721   | 339    | 167              | 1377   | 31     |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 163              | 11     | 138    | 24              | 27     | 13     | 12               | 1721   | 339    | 167              | 1377   | 31     |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 41               | 3      | 35     | 6               | 7      | 3      | 3                | 430    | 85     | 42               | 344    | 8      |
| Total Analysis Volume [veh/h]           | 163              | 11     | 138    | 24              | 27     | 13     | 12               | 1721   | 339    | 167              | 1377   | 31     |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.05 | 0.08 | 0.01 | 0.02 | 0.02 | 0.01 | 0.34 | 0.20 | 0.10 | 0.28 | 0.28 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.590 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.574 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O R             |        |        | O O R             |        |        | T O R            |        |        | T O R            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 163               | 231    | 81     | 308               | 608    | 105    | 128              | 1187   | 227    | 67               | 982    | 84     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 163               | 231    | 81     | 308               | 608    | 105    | 128              | 1187   | 227    | 67               | 982    | 84     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 41                | 58     | 20     | 77                | 152    | 26     | 32               | 297    | 57     | 17               | 246    | 21     |
| Total Analysis Volume [veh/h]           | 163               | 231    | 81     | 308               | 608    | 105    | 128              | 1187   | 227    | 67               | 982    | 84     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.09 | 0.09 | 0.09 | 0.18 | 0.06 | 0.04 | 0.28 | 0.28 | 0.02 | 0.21 | 0.21 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.574 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.526 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 121             | 167    | 113    | 255             | 254    | 184    | 179              | 909    | 84     | 111              | 1424   | 134    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 121             | 167    | 113    | 255             | 254    | 184    | 179              | 909    | 84     | 111              | 1424   | 134    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 30              | 42     | 28     | 64              | 64     | 46     | 45               | 227    | 21     | 28               | 356    | 34     |
| Total Analysis Volume [veh/h]           | 121             | 167    | 113    | 255             | 254    | 184    | 179              | 909    | 84     | 111              | 1424   | 134    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.05 | 0.07 | 0.08 | 0.07 | 0.11 | 0.05 | 0.18 | 0.05 | 0.03 | 0.28 | 0.08 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.526 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.688 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 234        | 181    | 133    | 775        | 444    | 20     | 33               | 1106   | 218    | 246              | 1295   | 501    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 234        | 181    | 133    | 775        | 444    | 20     | 33               | 1106   | 218    | 246              | 1295   | 501    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 59         | 45     | 33     | 194        | 111    | 5      | 8                | 277    | 55     | 62               | 324    | 125    |
| Total Analysis Volume [veh/h]           | 234        | 181    | 133    | 775        | 444    | 20     | 33               | 1106   | 218    | 246              | 1295   | 501    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.05 | 0.08 | 0.23 | 0.13 | 0.01 | 0.02 | 0.26 | 0.26 | 0.07 | 0.25 | 0.29 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.688 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.657 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | [Diagram]               |        |        | [Diagram]               |        |        | [Diagram]    |        |        | [Diagram]    |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 294                     | 558    | 242    | 529                     | 359    | 14     | 37           | 1108   | 238    | 303          | 979    | 666    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 294                     | 558    | 242    | 529                     | 359    | 14     | 37           | 1108   | 238    | 303          | 979    | 666    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 74                      | 140    | 61     | 132                     | 90     | 4      | 9            | 277    | 60     | 76           | 245    | 167    |
| Total Analysis Volume [veh/h]           | 294                     | 558    | 242    | 529                     | 359    | 14     | 37           | 1108   | 238    | 303          | 979    | 666    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.16 | 0.14 | 0.16 | 0.11 | 0.11 | 0.01 | 0.20 | 0.20 | 0.09 | 0.19 | 0.24 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.657 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.596 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐            |        |        | ⇐            |        |        | ⇐            |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1              | 0      | 1      | 0            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 430            | 0      | 675    | 0            | 1079   | 724    | 219          | 1562   | 0      |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 430            | 0      | 675    | 0            | 1079   | 724    | 219          | 1562   | 0      |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 108            | 0      | 169    | 0            | 270    | 181    | 55           | 391    | 0      |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 430            | 0      | 675    | 0            | 1079   | 724    | 219          | 1562   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.13 | 0.00 | 0.22 | 0.00 | 0.27 | 0.27 | 0.06 | 0.31 | 0.00 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.596 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.552 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐            |        |        |                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 0      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 618            | 0      | 253    | 0              | 0      | 0      | 343          | 1365   | 0      | 0            | 992    | 497    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 618            | 0      | 253    | 0              | 0      | 0      | 343          | 1365   | 0      | 0            | 992    | 497    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 155            | 0      | 63     | 0              | 0      | 0      | 86           | 341    | 0      | 0            | 248    | 124    |
| Total Analysis Volume [veh/h]           | 618            | 0      | 253    | 0              | 0      | 0      | 343          | 1365   | 0      | 0            | 992    | 497    |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|-------|---------|-------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 3     | 0       | 0     | 0       | 0       | 0       | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |         |       |         |         |         |          |         |         |         |         |         |
| Lead / Lag              | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.18  | 0.00 | 0.15 | 0.00 | 0.00 | 0.00 | 0.10 | 0.27 | 0.00 | 0.00 | 0.22 | 0.22 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.552 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.539 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | + + +        |        |        | + + +        |        |        | + + +        |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 109          | 0      | 26     | 95           | 0      | 372    | 159          | 1723   | 37     | 14           | 1354   | 42     |
| Base Volume Adjustment Factor           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 109          | 0      | 26     | 95           | 0      | 372    | 159          | 1723   | 37     | 14           | 1354   | 42     |
| Peak Hour Factor                        | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 27           | 0      | 7      | 24           | 0      | 93     | 40           | 431    | 9      | 4            | 339    | 11     |
| Total Analysis Volume [veh/h]           | 109          | 0      | 26     | 95           | 0      | 372    | 159          | 1723   | 37     | 14           | 1354   | 42     |
| Pedestrian Volume [ped/h]               | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.00 | 0.08 | 0.06 | 0.00 | 0.11 | 0.05 | 0.35 | 0.35 | 0.01 | 0.27 | 0.27 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.539 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.522 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 125               | 48     | 19     | 77          | 94     | 125    | 41           | 1633   | 186    | 23           | 1181   | 40     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 125               | 48     | 19     | 77          | 94     | 125    | 41           | 1633   | 186    | 23           | 1181   | 40     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 31                | 12     | 5      | 19          | 24     | 31     | 10           | 408    | 47     | 6            | 295    | 10     |
| Total Analysis Volume [veh/h]           | 125               | 48     | 19     | 77          | 94     | 125    | 41           | 1633   | 186    | 23           | 1181   | 40     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.02 | 0.02 | 0.05 | 0.06 | 0.06 | 0.01 | 0.32 | 0.11 | 0.01 | 0.24 | 0.24 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.522 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.506 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 474               | 279    | 207    | 4             | 94     | 108    | 172          | 787    | 447    | 74           | 312    | 26     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 474               | 279    | 207    | 4             | 94     | 108    | 172          | 787    | 447    | 74           | 312    | 26     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 119               | 70     | 52     | 1             | 24     | 27     | 43           | 197    | 112    | 19           | 78     | 7      |
| Total Analysis Volume [veh/h]           | 474               | 279    | 207    | 4             | 94     | 108    | 172          | 787    | 447    | 74           | 312    | 26     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.14  | 0.16 | 0.10 | 0.00 | 0.06 | 0.06 | 0.10 | 0.23 | 0.00 | 0.02 | 0.07 | 0.07 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.506 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.412 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 24               | 2      | 11     | 2                | 0      | 5      | 5            | 1154   | 19     | 5            | 563    | 3      |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 24               | 2      | 11     | 2                | 0      | 5      | 5            | 1154   | 19     | 5            | 563    | 3      |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 6                | 1      | 3      | 1                | 0      | 1      | 1            | 289    | 5      | 1            | 141    | 1      |
| Total Analysis Volume [veh/h]           | 24               | 2      | 11     | 2                | 0      | 5      | 5            | 1154   | 19     | 5            | 563    | 3      |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.35 | 0.35 | 0.00 | 0.11 | 0.11 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.412 |      |      |      |      |      |      |      |      |      |      |      |

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.569
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A
\*\*\*\*\*

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes. Rows include Valencia Ave, North Bound, South Bound, East Bound, and West Bound movements.

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module: Table with columns for Vol/Sat and Crit Moves values.

\*\*\*\*\*

**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.478 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ⤴             |        |        | ⤵                  |        |        | ⤵                  |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name                                    | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Base Volume Input [veh/h]               | 10            | 0      | 2      | 0             | 0      | 14     | 1                  | 1426   | 2      | 1                  | 288    | 7      |
| Base Volume Adjustment Factor           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                    | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]             | 10            | 0      | 2      | 0             | 0      | 14     | 1                  | 1426   | 2      | 1                  | 288    | 7      |
| Peak Hour Factor                        | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3             | 0      | 1      | 0             | 0      | 4      | 0                  | 357    | 1      | 0                  | 72     | 2      |
| Total Analysis Volume [veh/h]           | 10            | 0      | 2      | 0             | 0      | 14     | 1                  | 1426   | 2      | 1                  | 288    | 7      |
| Pedestrian Volume [ped/h]               | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]             | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.42 | 0.42 | 0.00 | 0.08 | 0.00 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.478 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.636 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 135                     | 337    | 150    | 301                     | 309    | 250    | 188          | 720    | 150    | 135          | 922    | 584    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 135                     | 337    | 150    | 301                     | 309    | 250    | 188          | 720    | 150    | 135          | 922    | 584    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 34                      | 84     | 38     | 75                      | 77     | 63     | 47           | 180    | 38     | 34           | 231    | 146    |
| Total Analysis Volume [veh/h]           | 135                     | 337    | 150    | 301                     | 309    | 250    | 188          | 720    | 150    | 135          | 922    | 584    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.10 | 0.09 | 0.09 | 0.09 | 0.15 | 0.06 | 0.21 | 0.09 | 0.04 | 0.27 | 0.34 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.636 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.602 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 447               | 31     | 333    | 10                | 19     | 6      | 12           | 828    | 278    | 275          | 1176   | 16     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 447               | 31     | 333    | 10                | 19     | 6      | 12           | 828    | 278    | 275          | 1176   | 16     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 112               | 8      | 83     | 3                 | 5      | 2      | 3            | 207    | 70     | 69           | 294    | 4      |
| Total Analysis Volume [veh/h]           | 447               | 31     | 333    | 10                | 19     | 6      | 12           | 828    | 278    | 275          | 1176   | 16     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.13  | 0.02 | 0.12 | 0.01 | 0.01 | 0.01 | 0.01 | 0.33 | 0.33 | 0.08 | 0.35 | 0.35 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.602 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.626 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3                 | 1      | 3      | 24                | 1      | 69     | 66           | 216    | 3      | 1            | 303    | 32     |
| Total Analysis Volume [veh/h]           | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.06 | 0.00 | 0.01 | 0.16 | 0.26 | 0.26 | 0.00 | 0.36 | 0.07 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.626 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.614 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 563               | 697    | 117    | 204               | 353    | 97     | 204          | 678    | 278    | 73           | 647    | 201    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 563               | 697    | 117    | 204               | 353    | 97     | 204          | 678    | 278    | 73           | 647    | 201    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 141               | 174    | 29     | 51                | 88     | 24     | 51           | 170    | 70     | 18           | 162    | 50     |
| Total Analysis Volume [veh/h]           | 563               | 697    | 117    | 204               | 353    | 97     | 204          | 678    | 278    | 73           | 647    | 201    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.17  | 0.16 | 0.16 | 0.06 | 0.09 | 0.09 | 0.12 | 0.20 | 0.16 | 0.04 | 0.19 | 0.12 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.614 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.914 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 186             | 510    | 14     | 416             | 205    | 36     | 168          | 582    | 130    | 11         | 430    | 707    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 186             | 510    | 14     | 416             | 205    | 36     | 168          | 582    | 130    | 11         | 430    | 707    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 47              | 128    | 4      | 104             | 51     | 9      | 42           | 146    | 33     | 3          | 108    | 177    |
| Total Analysis Volume [veh/h]           | 186             | 510    | 14     | 416             | 205    | 36     | 168          | 582    | 130    | 11         | 430    | 707    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.11  | 0.15 | 0.15 | 0.24 | 0.07 | 0.07 | 0.05 | 0.21 | 0.21 | 0.01 | 0.13 | 0.42 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.914 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.704 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           |            |        |            |        |                |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
| Base Volume Input [veh/h]               | 26         | 1000   | 1061       | 15     | 7              | 18     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]             | 26         | 1000   | 1061       | 15     | 7              | 18     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 7          | 250    | 265        | 4      | 2              | 5      |
| Total Analysis Volume [veh/h]           | 26         | 1000   | 1061       | 15     | 7              | 18     |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0              |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |            |            |            |            |            |            |
|-------------------------|------------|------------|------------|------------|------------|------------|
| Control Type            | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |            |            |            |            |            |            |
| Lead / Lag              | -          | -          | -          | -          | Lead       | -          |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.59 | 0.62 | 0.01 | 0.00 | 0.01 |
| Intersection LOS        | C     |      |      |      |      |      |
| Intersection V/C        | 0.704 |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.680 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ↵↵↵              |        |        | ↵                |        |        | ↵         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |        |        |        |
|---|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 632              | 0      | 502    | 0                | 1567   | 862    | 0      | 2079   | 375    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00   | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 632              | 0      | 502    | 0                | 1567   | 862    | 0      | 2079   | 375    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 158              | 0      | 126    | 0                | 392    | 216    | 0      | 520    | 94     |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 632              | 0      | 502    | 0                | 1567   | 862    | 0      | 2079   | 375    |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.19 | 0.00 | 0.22 | 0.00 | 0.31 | 0.00 | 0.00 | 0.41 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.680 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.761 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 848            | 72     | 397    | 0               | 0      | 231    | 206              | 1670   | 345    | 0                | 2186   | 46     |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 848            | 72     | 397    | 0               | 0      | 231    | 206              | 1670   | 345    | 0                | 2186   | 46     |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 212            | 18     | 99     | 0               | 0      | 58     | 52               | 418    | 86     | 0                | 547    | 12     |
| Total Analysis Volume [veh/h]           | 848            | 72     | 397    | 0               | 0      | 231    | 206              | 1670   | 345    | 0                | 2186   | 46     |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag              | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.17  | 0.19 | 0.19 | 0.00 | 0.00 | 0.07 | 0.12 | 0.33 | 0.00 | 0.00 | 0.33 | 0.33 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.761 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.763 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐                |        |        | ⇐⇐⇐                |        |        | ⇐⇐⇐              |        |        | ⇐⇐⇐⇐             |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 205                | 247    | 80     | 278                | 333    | 212    | 240              | 1697   | 132    | 167              | 1597   | 163    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 205                | 247    | 80     | 278                | 333    | 212    | 240              | 1697   | 132    | 167              | 1597   | 163    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 51                 | 62     | 20     | 70                 | 83     | 53     | 60               | 424    | 33     | 42               | 399    | 41     |
| Total Analysis Volume [veh/h]           | 205                | 247    | 80     | 278                | 333    | 212    | 240              | 1697   | 132    | 167              | 1597   | 163    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.10 | 0.10 | 0.08 | 0.20 | 0.12 | 0.14 | 0.36 | 0.36 | 0.10 | 0.26 | 0.26 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.763 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.684 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐              |        |        | ⇐⇐              |        |        | ⇐⇐⇐⇐⇐            |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 225              | 45     | 253    | 24              | 22     | 13     | 18               | 1713   | 263    | 219              | 1764   | 54     |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 225              | 45     | 253    | 24              | 22     | 13     | 18               | 1713   | 263    | 219              | 1764   | 54     |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 56               | 11     | 63     | 6               | 6      | 3      | 5                | 428    | 66     | 55               | 441    | 14     |
| Total Analysis Volume [veh/h]           | 225              | 45     | 253    | 24              | 22     | 13     | 18               | 1713   | 263    | 219              | 1764   | 54     |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.08 | 0.15 | 0.01 | 0.02 | 0.02 | 0.01 | 0.34 | 0.15 | 0.13 | 0.36 | 0.36 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.684 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.717 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O R             |        |        | O L R             |        |        | T O R            |        |        | T O R            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 338               | 580    | 97     | 251               | 445    | 107    | 202              | 1272   | 198    | 174              | 1406   | 303    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 338               | 580    | 97     | 251               | 445    | 107    | 202              | 1272   | 198    | 174              | 1406   | 303    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 85                | 145    | 24     | 63                | 111    | 27     | 51               | 318    | 50     | 44               | 352    | 76     |
| Total Analysis Volume [veh/h]           | 338               | 580    | 97     | 251               | 445    | 107    | 202              | 1272   | 198    | 174              | 1406   | 303    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.20 | 0.20 | 0.07 | 0.13 | 0.06 | 0.06 | 0.29 | 0.29 | 0.05 | 0.34 | 0.34 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.717 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.546 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]       |        |        | [Diagram]       |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 103             | 227    | 121    | 196             | 190    | 122    | 216              | 1638   | 134    | 158              | 1204   | 118    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 103             | 227    | 121    | 196             | 190    | 122    | 216              | 1638   | 134    | 158              | 1204   | 118    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 26              | 57     | 30     | 49              | 48     | 31     | 54               | 410    | 34     | 40               | 301    | 30     |
| Total Analysis Volume [veh/h]           | 103             | 227    | 121    | 196             | 190    | 122    | 216              | 1638   | 134    | 158              | 1204   | 118    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.07 | 0.07 | 0.06 | 0.06 | 0.07 | 0.06 | 0.32 | 0.08 | 0.05 | 0.24 | 0.07 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.546 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.891 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 238        | 468    | 113    | 843        | 407    | 18     | 64               | 1587   | 263    | 147              | 1217   | 711    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 238        | 468    | 113    | 843        | 407    | 18     | 64               | 1587   | 263    | 147              | 1217   | 711    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 60         | 117    | 28     | 211        | 102    | 5      | 16               | 397    | 66     | 37               | 304    | 178    |
| Total Analysis Volume [veh/h]           | 238        | 468    | 113    | 843        | 407    | 18     | 64               | 1587   | 263    | 147              | 1217   | 711    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.14 | 0.07 | 0.25 | 0.12 | 0.01 | 0.04 | 0.36 | 0.36 | 0.04 | 0.24 | 0.42 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.891 |      |      |      |      |      |      |      |      |      |      |      |

*APPENDIX C-II*

**YEAR 2035 CUMULATIVE TRAFFIC CONDITIONS**



**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.832 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⌈⌋⌈⌋                    |        |        | ⌈⌋                      |        |        | ⌈⌋⌈⌋⌈⌋       |        |        | ⌈⌋⌈⌋         |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 185                     | 238    | 225    | 963                     | 659    | 9      | 15           | 1511   | 230    | 517          | 1929   | 597    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 185                     | 238    | 225    | 963                     | 659    | 9      | 15           | 1511   | 230    | 517          | 1929   | 597    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 46                      | 60     | 56     | 241                     | 165    | 2      | 4            | 378    | 58     | 129          | 482    | 149    |
| Total Analysis Volume [veh/h]           | 185                     | 238    | 225    | 963                     | 659    | 9      | 15           | 1511   | 230    | 517          | 1929   | 597    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.09 | 0.09 | 0.28 | 0.20 | 0.20 | 0.00 | 0.26 | 0.26 | 0.15 | 0.38 | 0.07 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.832 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.796 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                |        |        | T T T T        |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1              | 0      | 1      | 0            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 1045           | 0      | 695    | 0            | 1855   | 619    | 256          | 2169   | 0      |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 1045           | 0      | 695    | 0            | 1855   | 619    | 256          | 2169   | 0      |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 261            | 0      | 174    | 0            | 464    | 155    | 64           | 542    | 0      |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 1045           | 0      | 695    | 0            | 1855   | 619    | 256          | 2169   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.31 | 0.00 | 0.20 | 0.00 | 0.36 | 0.18 | 0.08 | 0.43 | 0.00 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.796 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.850 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇌⇌⇌            |        |        |                |        |        | ⇌⇌⇌          |        |        | ⇌⇌⇌          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 1051           | 0      | 506    | 0              | 0      | 0      | 0            | 2505   | 404    | 0            | 1386   | 487    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 1051           | 0      | 506    | 0              | 0      | 0      | 0            | 2505   | 404    | 0            | 1386   | 487    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]          | 263            | 0      | 127    | 0              | 0      | 0      | 0            | 626    | 101    | 0            | 347    | 0      |
| Total Analysis Volume [veh/h]           | 1051           | 0      | 506    | 0              | 0      | 0      | 0            | 2505   | 404    | 0            | 1386   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Unsigna |
|-------------------------|-------|---------|-------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 3     | 0       | 0     | 0       | 0       | 0       | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |         |       |         |         |         |          |         |         |         |         |         |
| Lead / Lag              | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.31  | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.49 | 0.24 | 0.00 | 0.27 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.850 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.677 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | + + +        |        |        | + + +        |        |        | + + +        |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 9            | 8      | 7      | 66           | 1      | 130    | 557          | 2469   | 40     | 17           | 1907   | 183    |
| Base Volume Adjustment Factor           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 9            | 8      | 7      | 66           | 1      | 130    | 557          | 2469   | 40     | 17           | 1907   | 183    |
| Peak Hour Factor                        | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 2            | 2      | 2      | 17           | 0      | 33     | 139          | 617    | 10     | 4            | 477    | 46     |
| Total Analysis Volume [veh/h]           | 9            | 8      | 7      | 66           | 1      | 130    | 557          | 2469   | 40     | 17           | 1907   | 183    |
| Pedestrian Volume [ped/h]               | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.01 | 0.01 | 0.04 | 0.04 | 0.04 | 0.16 | 0.49 | 0.49 | 0.01 | 0.41 | 0.41 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.677 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.784 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 161               | 307    | 11     | 119         | 208    | 386    | 476          | 1962   | 165    | 22           | 1483   | 174    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 161               | 307    | 11     | 119         | 208    | 386    | 476          | 1962   | 165    | 22           | 1483   | 174    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 40                | 77     | 3      | 30          | 52     | 97     | 119          | 491    | 41     | 6            | 371    | 44     |
| Total Analysis Volume [veh/h]           | 161               | 307    | 11     | 119         | 208    | 386    | 476          | 1962   | 165    | 22           | 1483   | 174    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.09 | 0.09 | 0.07 | 0.17 | 0.17 | 0.14 | 0.38 | 0.10 | 0.01 | 0.32 | 0.32 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.784 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.684 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 316               | 124    | 42     | 21            | 236    | 355    | 109          | 765    | 1150   | 294          | 901    | 14     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 316               | 124    | 42     | 21            | 236    | 355    | 109          | 765    | 1150   | 294          | 901    | 14     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 79                | 31     | 11     | 5             | 59     | 89     | 27           | 191    | 288    | 74           | 225    | 4      |
| Total Analysis Volume [veh/h]           | 316               | 124    | 42     | 21            | 236    | 355    | 109          | 765    | 1150   | 294          | 901    | 14     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.07 | 0.00 | 0.01 | 0.14 | 0.21 | 0.06 | 0.23 | 0.25 | 0.09 | 0.18 | 0.18 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.684 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.347 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 46               | 6      | 18     | 5                | 0      | 6      | 7            | 819    | 49     | 25           | 1181   | 2      |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 46               | 6      | 18     | 5                | 0      | 6      | 7            | 819    | 49     | 25           | 1181   | 2      |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 12               | 2      | 5      | 1                | 0      | 2      | 2            | 205    | 12     | 6            | 295    | 1      |
| Total Analysis Volume [veh/h]           | 46               | 6      | 18     | 5                | 0      | 6      | 7            | 819    | 49     | 25           | 1181   | 2      |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.26 | 0.26 | 0.01 | 0.23 | 0.23 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.347 |      |      |      |      |      |      |      |      |      |      |      |

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.985
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: E
\*\*\*\*\*

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes. Rows include Valencia Ave and Lambert Rd/Carbon Canyon Rd with various movement and control details.

Volume Module: Table showing traffic volume data including Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume across different movements.

Saturation Flow Module: Table showing saturation flow data including Sat/Lane, Adjustment, Lanes, and Final Sat. for various movements.

Capacity Analysis Module: Table showing capacity analysis data including Vol/Sat and Crit Moves for different movements.

\*\*\*\*\*

**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.621 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ↱             |        |        | ↵                  |        |        | ↵                  |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name                                    | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Base Volume Input [veh/h]               | 5             | 1      | 1      | 0             | 0      | 25     | 15                 | 412    | 8      | 7                  | 1899   | 5      |
| Base Volume Adjustment Factor           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                    | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]             | 5             | 1      | 1      | 0             | 0      | 25     | 15                 | 412    | 8      | 7                  | 1899   | 5      |
| Peak Hour Factor                        | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1             | 0      | 0      | 0             | 0      | 6      | 4                  | 103    | 2      | 2                  | 475    | 1      |
| Total Analysis Volume [veh/h]           | 5             | 1      | 1      | 0             | 0      | 25     | 15                 | 412    | 8      | 7                  | 1899   | 5      |
| Pedestrian Volume [ped/h]               | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]             | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.12 | 0.12 | 0.00 | 0.56 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.621 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.573 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ☞☞☞                     |        |        | ☞☞☞                     |        |        | ☞☞☞          |        |        | ☞☞☞          |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 84                      | 169    | 110    | 739                     | 930    | 242    | 119          | 574    | 53     | 88           | 630    | 322    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 84                      | 169    | 110    | 739                     | 930    | 242    | 119          | 574    | 53     | 88           | 630    | 322    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 21                      | 42     | 28     | 185                     | 233    | 61     | 30           | 144    | 13     | 22           | 158    | 81     |
| Total Analysis Volume [veh/h]           | 84                      | 169    | 110    | 739                     | 930    | 242    | 119          | 574    | 53     | 88           | 630    | 322    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.05 | 0.06 | 0.22 | 0.27 | 0.14 | 0.04 | 0.17 | 0.03 | 0.03 | 0.19 | 0.19 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.573 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.701 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 272               | 7      | 344    | 60                | 32     | 10     | 5            | 1049   | 356    | 380          | 850    | 11     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 272               | 7      | 344    | 60                | 32     | 10     | 5            | 1049   | 356    | 380          | 850    | 11     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 68                | 2      | 86     | 15                | 8      | 3      | 1            | 262    | 89     | 95           | 213    | 3      |
| Total Analysis Volume [veh/h]           | 272               | 7      | 344    | 60                | 32     | 10     | 5            | 1049   | 356    | 380          | 850    | 11     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.00 | 0.09 | 0.04 | 0.02 | 0.02 | 0.00 | 0.41 | 0.41 | 0.11 | 0.25 | 0.25 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.701 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.607 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇌⇌⇌               |        |        | ⇌⇌⇌               |        |        | ⇌⇌⇌          |        |        | ⇌⇌⇌          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 3                 | 3      | 6      | 178               | 2      | 499    | 353          | 969    | 18     | 9            | 820    | 94     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 3                 | 3      | 6      | 178               | 2      | 499    | 353          | 969    | 18     | 9            | 820    | 94     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1                 | 1      | 2      | 45                | 1      | 125    | 88           | 242    | 5      | 2            | 205    | 24     |
| Total Analysis Volume [veh/h]           | 3                 | 3      | 6      | 178               | 2      | 499    | 353          | 969    | 18     | 9            | 820    | 94     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.10 | 0.00 | 0.09 | 0.21 | 0.29 | 0.29 | 0.01 | 0.24 | 0.06 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.607 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.613 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 148               | 239    | 101    | 487               | 1095   | 202    | 50           | 649    | 382    | 69           | 493    | 238    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 148               | 239    | 101    | 487               | 1095   | 202    | 50           | 649    | 382    | 69           | 493    | 238    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 37                | 60     | 25     | 122               | 274    | 51     | 13           | 162    | 96     | 17           | 123    | 60     |
| Total Analysis Volume [veh/h]           | 148               | 239    | 101    | 487               | 1095   | 202    | 50           | 649    | 382    | 69           | 493    | 238    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.07 | 0.07 | 0.14 | 0.25 | 0.25 | 0.03 | 0.19 | 0.22 | 0.04 | 0.15 | 0.14 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.613 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.831 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 148             | 239    | 15     | 819             | 894    | 278    | 69           | 509    | 148    | 14         | 403    | 348    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 148             | 239    | 15     | 819             | 894    | 278    | 69           | 509    | 148    | 14         | 403    | 348    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 37              | 60     | 4      | 205             | 224    | 70     | 17           | 127    | 37     | 4          | 101    | 87     |
| Total Analysis Volume [veh/h]           | 148             | 239    | 15     | 819             | 894    | 278    | 69           | 509    | 148    | 14         | 403    | 348    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.07 | 0.07 | 0.48 | 0.34 | 0.34 | 0.02 | 0.19 | 0.19 | 0.01 | 0.12 | 0.20 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.831 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.909 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           | ↶          |        | ↷          |        | ↵              |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
| Base Volume Input [veh/h]               | 11         | 773    | 1402       | 11     | 9              | 38     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]             | 11         | 773    | 1402       | 11     | 9              | 38     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3          | 193    | 351        | 3      | 2              | 10     |
| Total Analysis Volume [veh/h]           | 11         | 773    | 1402       | 11     | 9              | 38     |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0              |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |            |            |            |            |            |            |
|-------------------------|------------|------------|------------|------------|------------|------------|
| Control Type            | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |            |            |            |            |            |            |
| Lead / Lag              | -          | -          | -          | -          | Lead       | -          |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.45 | 0.82 | 0.01 | 0.01 | 0.03 |
| Intersection LOS        | E     |      |      |      |      |      |
| Intersection V/C        | 0.909 |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.703 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ↵↵↵              |        |        | ↵                |        |        | ↵         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |        |        |        |
|---|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 651              | 0      | 551    | 0                | 1671   | 792    | 0      | 2127   | 221    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00   | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 651              | 0      | 551    | 0                | 1671   | 792    | 0      | 2127   | 221    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 163              | 0      | 138    | 0                | 418    | 198    | 0      | 532    | 55     |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 651              | 0      | 551    | 0                | 1671   | 792    | 0      | 2127   | 221    |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.19 | 0.00 | 0.24 | 0.00 | 0.33 | 0.00 | 0.00 | 0.42 | 0.00 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.703 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.692 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐+           |        |        | ⇐⇐              |        |        | ⇐   ⇐            |        |        | ⇐                |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 1099           | 36     | 904    | 0               | 0      | 92     | 113              | 1545   | 606    | 0                | 1674   | 16     |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 1099           | 36     | 904    | 0               | 0      | 92     | 113              | 1545   | 606    | 0                | 1674   | 16     |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 275            | 9      | 226    | 0               | 0      | 23     | 28               | 386    | 152    | 0                | 419    | 4      |
| Total Analysis Volume [veh/h]           | 1099           | 36     | 904    | 0               | 0      | 92     | 113              | 1545   | 606    | 0                | 1674   | 16     |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag              | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.22  | 0.30 | 0.30 | 0.00 | 0.00 | 0.03 | 0.07 | 0.30 | 0.00 | 0.00 | 0.25 | 0.25 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.692 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.803 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐                |        |        | ⇐⇐⇐                |        |        | ⇐⇐⇐              |        |        | ⇐⇐⇐⇐             |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 164                | 227    | 79     | 181                | 360    | 177    | 227              | 2100   | 112    | 100              | 1818   | 108    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 164                | 227    | 79     | 181                | 360    | 177    | 227              | 2100   | 112    | 100              | 1818   | 108    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 41                 | 57     | 20     | 45                 | 90     | 44     | 57               | 525    | 28     | 25               | 455    | 27     |
| Total Analysis Volume [veh/h]           | 164                | 227    | 79     | 181                | 360    | 177    | 227              | 2100   | 112    | 100              | 1818   | 108    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.09 | 0.09 | 0.05 | 0.21 | 0.10 | 0.13 | 0.43 | 0.43 | 0.06 | 0.28 | 0.28 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.803 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.688 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐              |        |        | ⇐⇐              |        |        | ⇐⇐⇐⇐⇐            |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 199              | 13     | 159    | 27              | 31     | 15     | 14               | 2066   | 398    | 191              | 1675   | 35     |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 199              | 13     | 159    | 27              | 31     | 15     | 14               | 2066   | 398    | 191              | 1675   | 35     |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 50               | 3      | 40     | 7               | 8      | 4      | 4                | 517    | 100    | 48               | 419    | 9      |
| Total Analysis Volume [veh/h]           | 199              | 13     | 159    | 27              | 31     | 15     | 14               | 2066   | 398    | 191              | 1675   | 35     |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.06 | 0.09 | 0.02 | 0.03 | 0.03 | 0.01 | 0.41 | 0.23 | 0.11 | 0.34 | 0.34 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.688 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.667 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O R             |        |        | O O R             |        |        | T O R            |        |        | T O R            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 192               | 263    | 94     | 352               | 693    | 122    | 148              | 1441   | 263    | 77               | 1216   | 96     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 192               | 263    | 94     | 352               | 693    | 122    | 148              | 1441   | 263    | 77               | 1216   | 96     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 48                | 66     | 24     | 88                | 173    | 31     | 37               | 360    | 66     | 19               | 304    | 24     |
| Total Analysis Volume [veh/h]           | 192               | 263    | 94     | 352               | 693    | 122    | 148              | 1441   | 263    | 77               | 1216   | 96     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.11 | 0.11 | 0.10 | 0.20 | 0.07 | 0.04 | 0.33 | 0.33 | 0.02 | 0.26 | 0.26 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.667 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.613 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 144             | 201    | 129    | 299             | 314    | 214    | 205              | 1100   | 99     | 127              | 1706   | 158    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 144             | 201    | 129    | 299             | 314    | 214    | 205              | 1100   | 99     | 127              | 1706   | 158    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 36              | 50     | 32     | 75              | 79     | 54     | 51               | 275    | 25     | 32               | 427    | 40     |
| Total Analysis Volume [veh/h]           | 144             | 201    | 129    | 299             | 314    | 214    | 205              | 1100   | 99     | 127              | 1706   | 158    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.06 | 0.08 | 0.09 | 0.09 | 0.13 | 0.06 | 0.22 | 0.06 | 0.04 | 0.33 | 0.09 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.613 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.801 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T      |        |        | T T T      |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 267        | 206    | 152    | 916        | 506    | 23     | 38               | 1333   | 249    | 280              | 1564   | 586    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 267        | 206    | 152    | 916        | 506    | 23     | 38               | 1333   | 249    | 280              | 1564   | 586    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 67         | 52     | 38     | 229        | 127    | 6      | 10               | 333    | 62     | 70               | 391    | 147    |
| Total Analysis Volume [veh/h]           | 267        | 206    | 152    | 916        | 506    | 23     | 38               | 1333   | 249    | 280              | 1564   | 586    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.06 | 0.09 | 0.27 | 0.15 | 0.01 | 0.02 | 0.31 | 0.31 | 0.08 | 0.31 | 0.34 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.801 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.829 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 350                     | 655    | 337    | 607                     | 439    | 16     | 42           | 1599   | 288    | 436          | 1286   | 763    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 350                     | 655    | 337    | 607                     | 439    | 16     | 42           | 1599   | 288    | 436          | 1286   | 763    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 88                      | 164    | 84     | 152                     | 110    | 4      | 11           | 400    | 72     | 109          | 322    | 191    |
| Total Analysis Volume [veh/h]           | 350                     | 655    | 337    | 607                     | 439    | 16     | 42           | 1599   | 288    | 436          | 1286   | 763    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.19 | 0.19 | 0.18 | 0.13 | 0.13 | 0.01 | 0.28 | 0.28 | 0.13 | 0.25 | 0.27 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.829 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.656 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                |        |        | T T T T        |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1              | 0      | 1      | 0            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 454            | 0      | 855    | 0            | 1430   | 835    | 251          | 1740   | 0      |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 454            | 0      | 855    | 0            | 1430   | 835    | 251          | 1740   | 0      |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 114            | 0      | 214    | 0            | 358    | 209    | 63           | 435    | 0      |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 454            | 0      | 855    | 0            | 1430   | 835    | 251          | 1740   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.13 | 0.00 | 0.25 | 0.00 | 0.28 | 0.25 | 0.07 | 0.34 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.656 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.558 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇌⇌⇌            |        |        |                |        |        | ⇌⇌⇌          |        |        | ⇌⇌⇌          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 676            | 0      | 301    | 0              | 0      | 0      | 0            | 1528   | 576    | 0            | 1137   | 523    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 676            | 0      | 301    | 0              | 0      | 0      | 0            | 1528   | 576    | 0            | 1137   | 523    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]          | 169            | 0      | 75     | 0              | 0      | 0      | 0            | 382    | 144    | 0            | 284    | 0      |
| Total Analysis Volume [veh/h]           | 676            | 0      | 301    | 0              | 0      | 0      | 0            | 1528   | 576    | 0            | 1137   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Unsigna |
|-------------------------|-------|---------|-------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 3     | 0       | 0     | 0       | 0       | 0       | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |         |       |         |         |         |          |         |         |         |         |         |
| Lead / Lag              | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.20  | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.22 | 0.00 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.558 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.638 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | + + +        |        |        | + + +        |        |        | + + +        |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 124          | 0      | 30     | 120          | 0      | 447    | 204          | 2085   | 42     | 16           | 1629   | 60     |
| Base Volume Adjustment Factor           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 124          | 0      | 30     | 120          | 0      | 447    | 204          | 2085   | 42     | 16           | 1629   | 60     |
| Peak Hour Factor                        | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 31           | 0      | 8      | 30           | 0      | 112    | 51           | 521    | 11     | 4            | 407    | 15     |
| Total Analysis Volume [veh/h]           | 124          | 0      | 30     | 120          | 0      | 447    | 204          | 2085   | 42     | 16           | 1629   | 60     |
| Pedestrian Volume [ped/h]               | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.00 | 0.09 | 0.07 | 0.00 | 0.13 | 0.06 | 0.42 | 0.42 | 0.01 | 0.33 | 0.33 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.638 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.618 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 147               | 59     | 22     | 88          | 112    | 144    | 47           | 1992   | 216    | 26           | 1439   | 46     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 147               | 59     | 22     | 88          | 112    | 144    | 47           | 1992   | 216    | 26           | 1439   | 46     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 37                | 15     | 6      | 22          | 28     | 36     | 12           | 498    | 54     | 7            | 360    | 12     |
| Total Analysis Volume [veh/h]           | 147               | 59     | 22     | 88          | 112    | 144    | 47           | 1992   | 216    | 26           | 1439   | 46     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.02 | 0.02 | 0.05 | 0.08 | 0.08 | 0.01 | 0.39 | 0.13 | 0.02 | 0.29 | 0.29 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.618 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.611 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 542               | 327    | 238    | 5             | 116    | 126    | 199          | 1022   | 510    | 90           | 440    | 30     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 542               | 327    | 238    | 5             | 116    | 126    | 199          | 1022   | 510    | 90           | 440    | 30     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 136               | 82     | 60     | 1             | 29     | 32     | 50           | 256    | 128    | 23           | 110    | 8      |
| Total Analysis Volume [veh/h]           | 542               | 327    | 238    | 5             | 116    | 126    | 199          | 1022   | 510    | 90           | 440    | 30     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.16  | 0.19 | 0.11 | 0.00 | 0.07 | 0.07 | 0.12 | 0.30 | 0.00 | 0.03 | 0.09 | 0.09 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.611 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.501 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 27               | 2      | 13     | 2                | 0      | 6      | 6            | 1444   | 22     | 6            | 732    | 3      |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 27               | 2      | 13     | 2                | 0      | 6      | 6            | 1444   | 22     | 6            | 732    | 3      |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 7                | 1      | 3      | 1                | 0      | 2      | 2            | 361    | 6      | 2            | 183    | 1      |
| Total Analysis Volume [veh/h]           | 27               | 2      | 13     | 2                | 0      | 6      | 6            | 1444   | 22     | 6            | 732    | 3      |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.43 | 0.43 | 0.00 | 0.14 | 0.14 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.501 |      |      |      |      |      |      |      |      |      |      |      |

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.650
Loss Time (sec):      5           Average Delay (sec/veh):          xxxxxx
Optimal Cycle:        33          Level Of Service:          B
*****
Street Name:          Valencia Ave          Lambert Rd/Carbon Canyon Rd
Approach:              North Bound          South Bound          East Bound          West Bound
Movement:              L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:               Protected          Protected          Protected          Protected
Rights:                Ignore           Include           Include           Include
Min. Green:            0 0 0           0 0 0           0 0 0           0 0 0
Y+R:                   4.0 4.0 4.0     4.0 4.0 4.0     4.0 4.0 4.0     4.0 4.0 4.0
Lanes:                 1 0 2 0 1       1 0 1 1 0       1 0 2 1 0       2 0 2 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:              351 154 828     26 118 36       31 909 507     171 349 9
Growth Adj:            1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:           351 154 828     26 118 36       31 909 507     171 349 9
Added Vol:              0 0 0           0 0 0           0 0 0           0 0 0
PasserByVol:           0 0 0           0 0 0           0 0 0           0 0 0
Initial Fut:           351 154 828     26 118 36       31 909 507     171 349 9
User Adj:              1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:            351 154 0        26 118 36       31 909 507     171 349 9
Reduct Vol:            0 0 0           0 0 0           0 0 0           0 0 0
Reduced Vol:           351 154 0        26 118 36       31 909 507     171 349 9
PCE Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:           351 154 0        26 118 36       31 909 507     171 349 9
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:            1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:                 1.00 2.00 1.00  1.00 1.53 0.47  1.00 2.00 1.00  2.00 2.92 0.08
Final Sat.:           1700 3400 1700  1700 2605 795  1700 3400 1700  3400 4972 128
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.21 0.05 0.00  0.02 0.05 0.05  0.02 0.27 0.30  0.05 0.07 0.07
Crit Moves:           ****              ****              ****              ****
*****

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**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.582 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ↱             |        |        | ↵↶                 |        |        | ↵↷                 |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name                                    | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Base Volume Input [veh/h]               | 11            | 0      | 2      | 0             | 0      | 16     | 1                  | 1780   | 2      | 1                  | 430    | 8      |
| Base Volume Adjustment Factor           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                    | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]             | 11            | 0      | 2      | 0             | 0      | 16     | 1                  | 1780   | 2      | 1                  | 430    | 8      |
| Peak Hour Factor                        | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3             | 0      | 1      | 0             | 0      | 4      | 0                  | 445    | 1      | 0                  | 108    | 2      |
| Total Analysis Volume [veh/h]           | 11            | 0      | 2      | 0             | 0      | 16     | 1                  | 1780   | 2      | 1                  | 430    | 8      |
| Pedestrian Volume [ped/h]               | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]             | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.52 | 0.52 | 0.00 | 0.13 | 0.00 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.582 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.809 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | 三                       |        |        | 三                       |        |        | 三            |        |        | 三            |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 157                     | 456    | 174    | 374                     | 415    | 346    | 305          | 848    | 173    | 161          | 1083   | 713    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 157                     | 456    | 174    | 374                     | 415    | 346    | 305          | 848    | 173    | 161          | 1083   | 713    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 39                      | 114    | 44     | 94                      | 104    | 87     | 76           | 212    | 43     | 40           | 271    | 178    |
| Total Analysis Volume [veh/h]           | 157                     | 456    | 174    | 374                     | 415    | 346    | 305          | 848    | 173    | 161          | 1083   | 713    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.13 | 0.10 | 0.11 | 0.12 | 0.20 | 0.09 | 0.25 | 0.10 | 0.05 | 0.32 | 0.42 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.809 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.705 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 532               | 35     | 379    | 11                | 22     | 10     | 16           | 987    | 332    | 313          | 1399   | 18     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 532               | 35     | 379    | 11                | 22     | 10     | 16           | 987    | 332    | 313          | 1399   | 18     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 133               | 9      | 95     | 3                 | 6      | 3      | 4            | 247    | 83     | 78           | 350    | 5      |
| Total Analysis Volume [veh/h]           | 532               | 35     | 379    | 11                | 22     | 10     | 16           | 987    | 332    | 313          | 1399   | 18     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.16  | 0.02 | 0.13 | 0.01 | 0.02 | 0.02 | 0.01 | 0.39 | 0.39 | 0.09 | 0.42 | 0.42 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.705 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.727 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 14                | 2      | 11     | 113               | 3      | 319    | 306          | 1023   | 13     | 6            | 1435   | 149    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 14                | 2      | 11     | 113               | 3      | 319    | 306          | 1023   | 13     | 6            | 1435   | 149    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 4                 | 1      | 3      | 28                | 1      | 80     | 77           | 256    | 3      | 2            | 359    | 37     |
| Total Analysis Volume [veh/h]           | 14                | 2      | 11     | 113               | 3      | 319    | 306          | 1023   | 13     | 6            | 1435   | 149    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.07 | 0.00 | 0.01 | 0.18 | 0.30 | 0.30 | 0.00 | 0.42 | 0.09 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.727 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.714 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 642               | 801    | 134    | 233               | 406    | 122    | 240          | 807    | 317    | 84           | 784    | 229    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 642               | 801    | 134    | 233               | 406    | 122    | 240          | 807    | 317    | 84           | 784    | 229    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 161               | 200    | 34     | 58                | 102    | 31     | 60           | 202    | 79     | 21           | 196    | 57     |
| Total Analysis Volume [veh/h]           | 642               | 801    | 134    | 233               | 406    | 122    | 240          | 807    | 317    | 84           | 784    | 229    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.19  | 0.18 | 0.18 | 0.07 | 0.10 | 0.10 | 0.14 | 0.24 | 0.19 | 0.05 | 0.23 | 0.13 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.714 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.047 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | ↵↵↵             |        |        | ↵↵↵             |        |        | ↵↵↵          |        |        | ↵↵↵        |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 212             | 618    | 16     | 474             | 257    | 46     | 196          | 686    | 148    | 13         | 524    | 806    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 212             | 618    | 16     | 474             | 257    | 46     | 196          | 686    | 148    | 13         | 524    | 806    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 53              | 155    | 4      | 119             | 64     | 12     | 49           | 172    | 37     | 3          | 131    | 202    |
| Total Analysis Volume [veh/h]           | 212             | 618    | 16     | 474             | 257    | 46     | 196          | 686    | 148    | 13         | 524    | 806    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.12  | 0.19 | 0.19 | 0.28 | 0.09 | 0.09 | 0.06 | 0.25 | 0.25 | 0.01 | 0.15 | 0.47 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.047 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.810 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           | ↵          |        | ↵          |        | ↵              |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
| Base Volume Input [veh/h]               | 30         | 1174   | 1233       | 17     | 8              | 21     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]             | 30         | 1174   | 1233       | 17     | 8              | 21     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8          | 294    | 308        | 4      | 2              | 5      |
| Total Analysis Volume [veh/h]           | 30         | 1174   | 1233       | 17     | 8              | 21     |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0              |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |            |            |            |            |            |            |
|-------------------------|------------|------------|------------|------------|------------|------------|
| Control Type            | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |            |            |            |            |            |            |
| Lead / Lag              | -          | -          | -          | -          | Lead       | -          |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.69 | 0.73 | 0.01 | 0.00 | 0.02 |
| Intersection LOS        | D     |      |      |      |      |      |
| Intersection V/C        | 0.810 |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.826 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ↵↵↵              |        |        | ↵                |        |        | ↵         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |        |        |        |
|---|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 730              | 0      | 605    | 0                | 1898   | 1100   | 0      | 2623   | 451    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00   | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 730              | 0      | 605    | 0                | 1898   | 1100   | 0      | 2623   | 451    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 183              | 0      | 151    | 0                | 475    | 275    | 0      | 656    | 113    |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 730              | 0      | 605    | 0                | 1898   | 1100   | 0      | 2623   | 451    |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.21 | 0.00 | 0.26 | 0.00 | 0.37 | 0.00 | 0.00 | 0.51 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.826 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.880 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 1110           | 72     | 482    | 0               | 0      | 217    | 205              | 2041   | 410    | 0                | 2686   | 43     |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 1110           | 72     | 482    | 0               | 0      | 217    | 205              | 2041   | 410    | 0                | 2686   | 43     |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 278            | 18     | 121    | 0               | 0      | 54     | 51               | 510    | 103    | 0                | 672    | 11     |
| Total Analysis Volume [veh/h]           | 1110           | 72     | 482    | 0               | 0      | 217    | 205              | 2041   | 410    | 0                | 2686   | 43     |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag              | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.22  | 0.24 | 0.24 | 0.00 | 0.00 | 0.06 | 0.12 | 0.40 | 0.00 | 0.00 | 0.40 | 0.40 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.880 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.893 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐                |        |        | ⇐⇐⇐                |        |        | ⇐⇐⇐              |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 240                | 282    | 92     | 320                | 380    | 280    | 296              | 2073   | 153    | 191              | 1967   | 203    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 240                | 282    | 92     | 320                | 380    | 280    | 296              | 2073   | 153    | 191              | 1967   | 203    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 60                 | 71     | 23     | 80                 | 95     | 70     | 74               | 518    | 38     | 48               | 492    | 51     |
| Total Analysis Volume [veh/h]           | 240                | 282    | 92     | 320                | 380    | 280    | 296              | 2073   | 153    | 191              | 1967   | 203    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.11 | 0.11 | 0.09 | 0.22 | 0.16 | 0.17 | 0.44 | 0.44 | 0.11 | 0.32 | 0.32 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.893 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.804 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐              |        |        | ⇐⇐              |        |        | ⇐⇐⇐⇐⇐            |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 276              | 51     | 292    | 28              | 25     | 15     | 21               | 2088   | 308    | 254              | 2154   | 63     |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 276              | 51     | 292    | 28              | 25     | 15     | 21               | 2088   | 308    | 254              | 2154   | 63     |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 69               | 13     | 73     | 7               | 6      | 4      | 5                | 522    | 77     | 64               | 539    | 16     |
| Total Analysis Volume [veh/h]           | 276              | 51     | 292    | 28              | 25     | 15     | 21               | 2088   | 308    | 254              | 2154   | 63     |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.10 | 0.17 | 0.02 | 0.02 | 0.02 | 0.01 | 0.41 | 0.18 | 0.15 | 0.43 | 0.43 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.804 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.835 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O R             |        |        | O L R             |        |        | T O R            |        |        | T O R            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 398               | 661    | 112    | 286               | 507    | 127    | 235              | 1557   | 239    | 201              | 1718   | 347    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 398               | 661    | 112    | 286               | 507    | 127    | 235              | 1557   | 239    | 201              | 1718   | 347    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 100               | 165    | 28     | 72                | 127    | 32     | 59               | 389    | 60     | 50               | 430    | 87     |
| Total Analysis Volume [veh/h]           | 398               | 661    | 112    | 286               | 507    | 127    | 235              | 1557   | 239    | 201              | 1718   | 347    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.12  | 0.23 | 0.23 | 0.08 | 0.15 | 0.07 | 0.07 | 0.35 | 0.35 | 0.06 | 0.40 | 0.40 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.835 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.638 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 125             | 284    | 138    | 229             | 233    | 141    | 252              | 1957   | 163    | 180              | 1457   | 143    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 125             | 284    | 138    | 229             | 233    | 141    | 252              | 1957   | 163    | 180              | 1457   | 143    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 31              | 71     | 35     | 57              | 58     | 35     | 63               | 489    | 41     | 45               | 364    | 36     |
| Total Analysis Volume [veh/h]           | 125             | 284    | 138    | 229             | 233    | 141    | 252              | 1957   | 163    | 180              | 1457   | 143    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.08 | 0.08 | 0.07 | 0.07 | 0.08 | 0.07 | 0.38 | 0.10 | 0.05 | 0.29 | 0.08 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.638 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.036 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 271        | 534    | 129    | 984        | 464    | 21     | 73               | 1905   | 300    | 168              | 1479   | 845    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 271        | 534    | 129    | 984        | 464    | 21     | 73               | 1905   | 300    | 168              | 1479   | 845    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 68         | 134    | 32     | 246        | 116    | 5      | 18               | 476    | 75     | 42               | 370    | 211    |
| Total Analysis Volume [veh/h]           | 271        | 534    | 129    | 984        | 464    | 21     | 73               | 1905   | 300    | 168              | 1479   | 845    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.16 | 0.08 | 0.29 | 0.14 | 0.01 | 0.04 | 0.43 | 0.43 | 0.05 | 0.29 | 0.50 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.036 |      |      |      |      |      |      |      |      |      |      |      |

*APPENDIX C-III*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.835 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T        |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name                                    | St Co                     |      |      | St Co |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|---------------------------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 185  | 238  | 225   | 963  | 659  | 9            | 15   | 152  | 230          | 517  | 196  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 185                       | 238  | 225  | 963   | 659  | 9    | 15           | 152  | 230  | 517          | 196  | 597  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 46                        | 60   | 56   | 241   | 165  | 2    | 4            | 382  | 58   | 129          | 492  | 149  |
| Total Analysis Volume [veh/h]           | 185                       | 238  | 225  | 963   | 659  | 9    | 15           | 152  | 230  | 517          | 196  | 597  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0            |      |      | 0            |      |      |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Ove |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 6   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     | 6,7 |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.09 | 0.09 | 0.28 | 0.20 | 0.20 | 0.00 | 0.26 | 0.26 | 0.15 | 0.39 | 0.07 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.835 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.813 |

**Intersection Setup**

| Name                         | SR-57      |      |       | SR-57      |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Approach   |      |       |            |      |       | Approach     |      |       |              |      |       |
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |            |      |       | R R R      |      |       |              |      |       | R            |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 0     | 1          | 0    | 1     | 0            | 0    | 1     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | No           |      |       | No           |      |       |

**Volumes**

| Name                                    | SR-57    |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|----------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   | Approach |      |      |       |      |      | Approach     |      |      |              |      |      |
| Base Volume Input [veh/h]               | 0        | 0    | 0    | 106   | 0    | 695  | 0            | 187  | 619  | 276          | 220  | 0    |
| Base Volume Adjustment Factor           | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00     | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 0        | 0    | 0    | 106   | 0    | 695  | 0            | 187  | 619  | 276          | 220  | 0    |
| Peak Hour Factor                        | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 0        | 0    | 0    | 267   | 0    | 174  | 0            | 468  | 155  | 69           | 552  | 0    |
| Total Analysis Volume [veh/h]           | 0        | 0    | 0    | 106   | 0    | 695  | 0            | 187  | 619  | 276          | 220  | 0    |
| Pedestrian Volume [ped/h]               | 0        |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0        |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Split | Per | Split | Per | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-------|-----|-------|-----|-----|-----|------|-----|-----|
| Signal Group            | 0   | 0   | 0   | 7     | 0   | 0     | 0   | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |       |     |       |     |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | Lea   | -   | -     | -   | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.31 | 0.00 | 0.20 | 0.00 | 0.37 | 0.18 | 0.08 | 0.43 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.813 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.859 |

**Intersection Setup**

| Name                         | SR-57      |      |       | SR-57      |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Approach   |      |       |            |      |       | Approach     |      |       |              |      |       |
| Approach                     | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           | ⇐⇐⇐        |      |       |            |      |       | ⇐⇐⇐          |      |       | ⇐⇐⇐          |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 0          | 0    | 0     | 1            | 0    | 1     | 0            | 0    | 1     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | No         |      |       | No           |      |       | No           |      |       |

**Volumes**

| Name                                    | SR-57    |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|----------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   | Approach |      |      |       |      |      | Approach     |      |      |              |      |      |
| Base Volume Input [veh/h]               | 105      | 0    | 513  | 0     | 0    | 0    | 0            | 254  | 404  | 0            | 144  | 549  |
| Base Volume Adjustment Factor           | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00     | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 105      | 0    | 513  | 0     | 0    | 0    | 0            | 254  | 404  | 0            | 144  | 549  |
| Peak Hour Factor                        | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 0.00 |
| Total 15-Minute Volume [veh/h]          | 263      | 0    | 128  | 0     | 0    | 0    | 0            | 637  | 101  | 0            | 362  | 0    |
| Total Analysis Volume [veh/h]           | 105      | 0    | 513  | 0     | 0    | 0    | 0            | 254  | 404  | 0            | 144  | 0    |
| Pedestrian Volume [ped/h]               | 0        |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0        |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Per | Split | Per | Per | Per | Prot | Per | Per | Per | Per | Per | Unsi |
|-------------------------|-------|-----|-------|-----|-----|-----|------|-----|-----|-----|-----|-----|------|
| Signal Group            | 3     | 0   | 0     | 0   | 0   | 0   | 5    | 2   | 0   | 0   | 6   | 0   |      |
| Auxiliary Signal Groups |       |     |       |     |     |     |      |     |     |     |     |     |      |
| Lead / Lag              | Lea   | -   | -     | -   | -   | -   | Lea  | -   | -   | -   | -   | -   | -    |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.31  | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 0.24 | 0.00 | 0.28 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.859 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.701 |

**Intersection Setup**

| Name                         | Pointe Drive |      |       | Pointe Drive |      |       | Lambert Road |            |           | Lambert Road |      |           |  |
|------------------------------|--------------|------|-------|--------------|------|-------|--------------|------------|-----------|--------------|------|-----------|--|
|                              | Approach     |      |       |              |      |       | Northbound   | Southbound | Eastbound |              |      | Westbound |  |
| Lane Configuration           | +            |      |       | + + +        |      |       | + + +        |            |           | + + +        |      |           |  |
| Turning Movement             | Left         | Thru | Right | Left         | Thru | Right | Left         | Thru       | Right     | Left         | Thru | Right     |  |
| Lane Width [ft]              | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0       | 12.0      | 12.0         | 12.0 | 12.0      |  |
| No. of Lanes in Entry Pocket | 0            | 0    | 0     | 0            | 0    | 1     | 1            | 0          | 0         | 1            | 0    | 0         |  |
| Entry Pocket Length [ft]     | 100.         | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100.       | 100.      | 100.         | 100. | 100.      |  |
| No. of Lanes in Exit Pocket  | 0            | 0    | 0     | 0            | 0    | 0     | 0            | 0          | 0         | 0            | 0    | 0         |  |
| Exit Pocket Length [ft]      | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00       | 0.00      | 0.00         | 0.00 | 0.00      |  |
| Speed [mph]                  | 30.00        |      |       | 30.00        |      |       | 30.00        |            |           | 30.00        |      |           |  |
| Grade [%]                    | 0.00         |      |       | 0.00         |      |       | 0.00         |            |           | 0.00         |      |           |  |
| Crosswalk                    | Yes          |      |       | Yes          |      |       | No           |            |           | Yes          |      |           |  |

**Volumes**

| Name                                    | Pointe Drive |      |      | Pointe Drive |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
|   | 9            | 8    | 7    | 66           | 1    | 130  | 557          | 251  | 40   | 17           | 203  | 183  |
| Base Volume Input [veh/h]               | 9            | 8    | 7    | 66           | 1    | 130  | 557          | 251  | 40   | 17           | 203  | 183  |
| Base Volume Adjustment Factor           | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 9            | 8    | 7    | 66           | 1    | 130  | 557          | 251  | 40   | 17           | 203  | 183  |
| Peak Hour Factor                        | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 2            | 2    | 2    | 17           | 0    | 33   | 139          | 630  | 10   | 4            | 508  | 46   |
| Total Analysis Volume [veh/h]           | 9            | 8    | 7    | 66           | 1    | 130  | 557          | 251  | 40   | 17           | 203  | 183  |
| Pedestrian Volume [ped/h]               | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 0   | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.01 | 0.01 | 0.04 | 0.04 | 0.04 | 0.16 | 0.50 | 0.50 | 0.01 | 0.43 | 0.43 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.701 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.809 |

**Intersection Setup**

| Name                         | N As       |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound  |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           |            |      |      |             |      |      |              |      |      |              |      |      |
| Turning Movement             | Left       | Thru | Righ | Left        | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0        | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1           | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.        | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00        | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00       |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00        |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes         |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | N As                      |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|---------------------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 161  | 307  | 11          | 119  | 208  | 386          | 476  | 201  | 165          | 22   | 160  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00        | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 161                       | 307  | 11   | 119         | 208  | 386  | 476          | 201  | 165  | 22           | 160  | 174  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 40                        | 77   | 3    | 30          | 52   | 97   | 119          | 503  | 41   | 6            | 402  | 44   |
| Total Analysis Volume [veh/h]           | 161                       | 307  | 11   | 119         | 208  | 386  | 476          | 201  | 165  | 22           | 160  | 174  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0           |      |      | 0            |      |      | 0            |      |      |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.09 | 0.09 | 0.07 | 0.17 | 0.17 | 0.14 | 0.39 | 0.10 | 0.01 | 0.35 | 0.35 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.809 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.700 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound    |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]     |      |      | [Diagram]    |      |      | [Diagram]    |      |      |
| Turning Movement             | Left       | Thru | Righ | Left          | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0          | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1             | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.          | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00          | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00         |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00          |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes           |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | Kr Bo |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|-------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]               | 323   | 124  | 65   | 21            | 236  | 355  | 109          | 811  | 115  | 347          | 101  | 14   |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 323   | 124  | 65   | 21            | 236  | 355  | 109          | 811  | 115  | 347          | 101  | 14   |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 81    | 31   | 16   | 5             | 59   | 89   | 27           | 203  | 288  | 87           | 255  | 4    |
| Total Analysis Volume [veh/h]           | 323   | 124  | 65   | 21            | 236  | 355  | 109          | 811  | 115  | 347          | 101  | 14   |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Ove | Prot | Per | Per | Prot | Per | Ove | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 8   | 7    | 4   | 0   | 5    | 2   | 2   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     | 1,8 |      |     |     |      |     | 2,3 |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.07 | 0.00 | 0.01 | 0.14 | 0.21 | 0.06 | 0.24 | 0.24 | 0.10 | 0.20 | 0.20 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.700 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.367 |

**Intersection Setup**

| Name                         | Sunflower Street |      |       | Sunflower Street |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------------|------|-------|------------------|------|-------|--------------|------|-------|--------------|------|-------|
| Approach                     | Northbound       |      |       | Southbound       |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |                  |      |       |                  |      |       |              |      |       |              |      |       |
| Turning Movement             | Left             | Thru | Right | Left             | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0             | 12.0 | 12.0  | 12.0             | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1                | 0    | 0     | 0                | 0    | 1     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.             | 100. | 100.  | 100.             | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0                | 0    | 0     | 0                | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00             | 0.00 | 0.00  | 0.00             | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00            |      |       | 30.00            |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00             |      |       | 0.00             |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes              |      |       | Yes              |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name                                    | Sunflower Street |      |      | Sunflower Street |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|------------------|------|------|------------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]               | 46               | 6    | 18   | 5                | 0    | 6    | 7            | 887  | 49   | 25           | 135  | 2    |
| Base Volume Adjustment Factor           | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00 | 2.00 | 2.00             | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 46               | 6    | 18   | 5                | 0    | 6    | 7            | 887  | 49   | 25           | 135  | 2    |
| Peak Hour Factor                        | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 12               | 2    | 5    | 1                | 0    | 2    | 2            | 222  | 12   | 6            | 338  | 1    |
| Total Analysis Volume [veh/h]           | 46               | 6    | 18   | 5                | 0    | 6    | 7            | 887  | 49   | 25           | 135  | 2    |
| Pedestrian Volume [ped/h]               | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 7   | 0   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | Lea | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.28 | 0.28 | 0.01 | 0.27 | 0.27 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.367 |      |      |      |      |      |      |      |      |      |      |      |

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
*****
Cycle (sec):      100          Critical Vol./Cap.(X):      1.039
Loss Time (sec):  5           Average Delay (sec/veh):    xxxxxx
Optimal Cycle:   180          Level Of Service:          F
*****
Street Name:      Valencia Ave          Lambert Rd/Carbon Canyon Rd
Approach:         North Bound          South Bound          East Bound          West Bound
Movement:        L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:          Protected          Protected          Protected          Protected
Rights:           Ignore           Include           Include           Include
Min. Green:       0 0 0           0 0 0           0 0 0           0 0 0
Y+R:             4.0 4.0 4.0     4.0 4.0 4.0     4.0 4.0 4.0     4.0 4.0 4.0
Lanes:           1 0 2 0 1       1 0 1 1 0       1 0 2 1 0       2 0 2 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:         355 198 180     8 402 46       53 248 591     1022 870 2
Growth Adj:      1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:     355 198 180     8 402 46       53 248 591     1022 870 2
Added Vol:       0 0 0           0 0 0           0 0 0           0 0 0
PasserByVol:    0 0 0           0 0 0           0 0 0           0 0 0
Initial Fut:     355 198 180     8 402 46       53 248 591     1022 870 2
User Adj:        1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:         1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:      355 198 0       8 402 46       53 248 591     1022 870 2
Reduct Vol:     0 0 0           0 0 0           0 0 0           0 0 0
Reduced Vol:    355 198 0     8 402 46       53 248 591     1022 870 2
PCE Adj:         1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:         1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:    355 198 0     8 402 46       53 248 591     1022 870 2
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:        1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment:      1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:           1.00 2.00 1.00 1.00 1.79 0.21 1.00 2.00 1.00 2.00 2.99 0.01
Final Sat.:     1700 3400 1700 1700 3051 349 1700 3400 1700 3400 5088 12
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:         0.21 0.06 0.00 0.00 0.13 0.13 0.03 0.07 0.35 0.30 0.17 0.17
Crit Moves:     ****          ****          ****          ****
*****

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**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.624 |

**Intersection Setup**

| Name                         | Santa Fe Road |      |      | Santa Fe Road |      |      | Ca Ca     |      |      | Ca Ca     |      |      |
|------------------------------|---------------|------|------|---------------|------|------|-----------|------|------|-----------|------|------|
| Approach                     | Northbound    |      |      | Southbound    |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           |               |      |      |               |      |      |           |      |      |           |      |      |
| Turning Movement             | Left          | Thru | Righ | Left          | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0          | 12.0 | 12.0 | 12.0          | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0             | 0    | 0    | 0             | 0    | 0    | 1         | 0    | 0    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.          | 100. | 100. | 100.          | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0             | 0    | 0    | 0             | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00          | 0.00 | 0.00 | 0.00          | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00         |      |      | 30.00         |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00          |      |      | 0.00          |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes           |      |      | Yes           |      |      | No        |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Santa Fe Road |      |      | Santa Fe Road |      |      | Ca Ca |      |      | Ca Ca |      |      |
|---|---------------|------|------|---------------|------|------|-------|------|------|-------|------|------|
| Base Volume Input [veh/h]               | 5             | 1    | 1    | 0             | 0    | 25   | 15    | 434  | 8    | 7     | 190  | 5    |
| Base Volume Adjustment Factor           | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00          | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 5             | 1    | 1    | 0             | 0    | 25   | 15    | 434  | 8    | 7     | 190  | 5    |
| Peak Hour Factor                        | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 1             | 0    | 0    | 0             | 0    | 6    | 4     | 109  | 2    | 2     | 477  | 1    |
| Total Analysis Volume [veh/h]           | 5             | 1    | 1    | 0             | 0    | 25   | 15    | 434  | 8    | 7     | 190  | 5    |
| Pedestrian Volume [ped/h]               | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 0   | 0   | 4   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.13 | 0.13 | 0.00 | 0.56 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.624 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.573 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     |            |      |      |            |      |      |              |      |      |              |      |      |
| Lane Configuration           | ☞☞☞        |      |      | ☞☞☞        |      |      | ☞☞☞          |      |      | ☞☞☞          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | St Co                     |      |      | St Co |      |      | Birch Street |      |      | Birch Street |      |      |
|---|---------------------------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 84   | 169  | 116   | 739  | 930  | 242          | 119  | 580  | 53           | 101  | 643  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 84                        | 169  | 116  | 739   | 930  | 242  | 119          | 580  | 53   | 101          | 643  | 322  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 21                        | 42   | 29   | 185   | 233  | 61   | 30           | 145  | 13   | 25           | 161  | 81   |
| Total Analysis Volume [veh/h]           | 84                        | 169  | 116  | 739   | 930  | 242  | 119          | 580  | 53   | 101          | 643  | 322  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.05 | 0.07 | 0.22 | 0.27 | 0.14 | 0.04 | 0.17 | 0.03 | 0.03 | 0.19 | 0.19 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.573 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.708 |

**Intersection Setup**

| Name                         | S As       |      |       | S As       |      |       | Birch Street |      |       | Birch Street |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Approach                     |            |      |       |            |      |       |              |      |       |              |      |       |
| Lane Configuration           | ⇐⇐⇐        |      |       | ⇐⇐         |      |       | ⇐⇐           |      |       | ⇐⇐⇐          |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 1          | 0    | 0     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name                                    | S As       |      |      | S As       |      |      | Birch Street |      |      | Birch Street |      |      |
|---|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Base Volume Input [veh/h]               | 272        | 7    | 351  | 60         | 32   | 10   | 5            | 106  | 356  | 396          | 877  | 11   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 272        | 7    | 351  | 60         | 32   | 10   | 5            | 106  | 356  | 396          | 877  | 11   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 68         | 2    | 88   | 15         | 8    | 3    | 1            | 265  | 89   | 99           | 219  | 3    |
| Total Analysis Volume [veh/h]           | 272        | 7    | 351  | 60         | 32   | 10   | 5            | 106  | 356  | 396          | 877  | 11   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Ove | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 8   | 7   | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     | 1,8 |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.00 | 0.09 | 0.04 | 0.02 | 0.02 | 0.00 | 0.42 | 0.42 | 0.12 | 0.26 | 0.26 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.708 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.620 |

**Intersection Setup**

| Name                         | N As       |      |       | N As       |      |       | Birch Street |      |       | Birch Street |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |            |      |       |            |      |       |              |      |       |              |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 1          | 0    | 1     | 1            | 0    | 0     | 1            | 0    | 1     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes          |      |       | No           |      |       |

**Volumes**

| Name                                    | N As                      |      |      | N As |      |      | Birch Street |      |      | Birch Street |      |      |
|---|---------------------------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 3    | 3    | 6    | 178  | 2    | 499          | 353  | 986  | 18           | 9    | 864  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 3                         | 3    | 6    | 178  | 2    | 499  | 353          | 986  | 18   | 9            | 864  | 94   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 1                         | 1    | 2    | 45   | 1    | 125  | 88           | 247  | 5    | 2            | 216  | 24   |
| Total Analysis Volume [veh/h]           | 3                         | 3    | 6    | 178  | 2    | 499  | 353          | 986  | 18   | 9            | 864  | 94   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Ove | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-------|-------|-------|-------|-------|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5 |      |     |     |      |     |     |
| Lead / Lag              | -     | -     | -     | -     | -     | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.10 | 0.00 | 0.09 | 0.21 | 0.30 | 0.30 | 0.01 | 0.25 | 0.06 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.620 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.624 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T          |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | Kr Bo |      |      | Kr Bo |      |      | Birch Street |      |      | Birch Street |      |      |
|---|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]               | 148   | 256  | 101  | 490   | 113  | 216  | 56           | 660  | 382  | 69           | 522  | 245  |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 148   | 256  | 101  | 490   | 113  | 216  | 56           | 660  | 382  | 69           | 522  | 245  |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 37    | 64   | 25   | 123   | 284  | 54   | 14           | 165  | 96   | 17           | 131  | 61   |
| Total Analysis Volume [veh/h]           | 148   | 256  | 101  | 490   | 113  | 216  | 56           | 660  | 382  | 69           | 522  | 245  |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.07 | 0.07 | 0.14 | 0.26 | 0.26 | 0.03 | 0.19 | 0.22 | 0.04 | 0.15 | 0.14 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.624 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.904 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Birch Street |      |      | Rose Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Lane Configuration           | ↵↵         |      |      | ↵↵         |      |      | ↵↵↵          |      |      | ↵↵         |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1          | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00       |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes        |      |      |

**Volumes**

| Name                                    | Va Av      |      |      | Va Av      |      |      | Birch Street |      |      | Rose Drive |      |      |
|---|------------|------|------|------------|------|------|--------------|------|------|------------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Base Volume Input [veh/h]               | 149        | 259  | 26   | 879        | 946  | 300  | 79           | 520  | 149  | 44         | 430  | 391  |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]             | 149        | 259  | 26   | 879        | 946  | 300  | 79           | 520  | 149  | 44         | 430  | 391  |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 37         | 65   | 7    | 220        | 237  | 75   | 20           | 130  | 37   | 11         | 108  | 98   |
| Total Analysis Volume [veh/h]           | 149        | 259  | 26   | 879        | 946  | 300  | 79           | 520  | 149  | 44         | 430  | 391  |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0            |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0            |      |      | 0          |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.08 | 0.08 | 0.52 | 0.37 | 0.37 | 0.02 | 0.20 | 0.20 | 0.03 | 0.13 | 0.23 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.904 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.984 |

**Intersection Setup**

| Name                         | Rose Drive |      |       | Rose Drive |      |       | Vesuvius Drive |      |       | Vesuvius Drive |      |       |
|------------------------------|------------|------|-------|------------|------|-------|----------------|------|-------|----------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound      |      |       | Westbound      |      |       |
| Lane Configuration           |            |      |       |            |      |       |                |      |       |                |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left           | Thru | Right | Left           | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 1     | 1          | 0    | 1     | 0              | 0    | 0     | 1              | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.           | 100. | 100.  | 100.           | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0              | 0    | 0     | 0              | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00          |      |       | 30.00          |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00           |      |       | 0.00           |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes            |      |       | Yes            |      |       |

**Volumes**

| Name                                    | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|---|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Base Volume Input [veh/h]               | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]             | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 3          | 202  | 4    | 2          | 374  | 3    | 2              | 0    | 10   | 9              | 0    | 3    |
| Total Analysis Volume [veh/h]           | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Signal Group            | 0   | 6   | 0   | 0   | 2   | 0   | 0   | 8   | 0   | 0   | 4   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |     |     |     |     |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.24 | 0.24 | 0.00 | 0.88 | 0.01 | 0.01 | 0.00 | 0.03 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.984 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.705 |

**Intersection Setup**

| Name                         |          |      |       | SR-57      |      |       | Im Hi      |      |       | Im Hi     |      |       |           |  |
|------------------------------|----------|------|-------|------------|------|-------|------------|------|-------|-----------|------|-------|-----------|--|
|                              | Approach |      |       | Northbound |      |       | Southbound |      |       | Eastbound |      |       | Westbound |  |
| Lane Configuration           |          |      |       |            |      |       |            |      |       |           |      |       |           |  |
| Turning Movement             | Left     | Thru | Right | Left       | Thru | Right | Left       | Thru | Right | Left      | Thru | Right |           |  |
| Lane Width [ft]              | 12.0     | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |           |  |
| No. of Lanes in Entry Pocket | 0        | 0    | 0     | 1          | 0    | 1     | 0          | 0    | 1     | 0         | 0    | 1     |           |  |
| Entry Pocket Length [ft]     | 100.     | 100. | 100.  | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.      | 100. | 100.  |           |  |
| No. of Lanes in Exit Pocket  | 0        | 0    | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0         | 0    | 0     |           |  |
| Exit Pocket Length [ft]      | 0.00     | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |           |  |
| Speed [mph]                  | 30.00    |      |       | 30.00      |      |       | 30.00      |      |       | 30.00     |      |       |           |  |
| Grade [%]                    | 0.00     |      |       | 0.00       |      |       | 0.00       |      |       | 0.00      |      |       |           |  |
| Crosswalk                    | No       |      |       | Yes        |      |       | No         |      |       | No        |      |       |           |  |

**Volumes**

| Name                                    |                           |      |      | SR-57 |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 0    | 0    | 0     | 653  | 0    | 551   | 0    | 167  | 792   | 0    | 213  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 0                         | 0    | 0    | 653   | 0    | 551  | 0     | 167  | 792  | 0     | 213  | 233  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 0                         | 0    | 0    | 163   | 0    | 138  | 0     | 419  | 198  | 0     | 534  | 58   |
| Total Analysis Volume [veh/h]           | 0                         | 0    | 0    | 653   | 0    | 551  | 0     | 167  | 792  | 0     | 213  | 233  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Split | Per | Split | Per | Per | Unsi | Per | Per | Unsi |
|-------------------------|-----|-----|-----|-------|-----|-------|-----|-----|------|-----|-----|------|
| Signal Group            | 0   | 0   | 0   | 7     | 0   | 0     | 0   | 2   | 0    | 0   | 6   | 0    |
| Auxiliary Signal Groups |     |     |     |       |     |       |     |     |      |     |     |      |
| Lead / Lag              | -   | -   | -   | Lea   | -   | -     | -   | -   | -    | -   | -   | -    |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.19 | 0.00 | 0.24 | 0.00 | 0.33 | 0.00 | 0.00 | 0.42 | 0.00 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.705 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.696 |

**Intersection Setup**

| Name                         | SR-57    |      |       | Sh Ce |      |       | Im Hi      |            |           | Im Hi |      |           |  |
|------------------------------|----------|------|-------|-------|------|-------|------------|------------|-----------|-------|------|-----------|--|
|                              | Approach |      |       |       |      |       | Northbound | Southbound | Eastbound |       |      | Westbound |  |
| Lane Configuration           | ⇐⇐⇐+     |      |       | ⇐⇐    |      |       | ⇐   ⇐      |            |           | ⇐     |      |           |  |
| Turning Movement             | Left     | Thru | Right | Left  | Thru | Right | Left       | Thru       | Right     | Left  | Thru | Right     |  |
| Lane Width [ft]              | 12.0     | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0       | 12.0       | 12.0      | 12.0  | 12.0 | 12.0      |  |
| No. of Lanes in Entry Pocket | 1        | 0    | 1     | 0     | 0    | 1     | 1          | 0          | 1         | 0     | 0    | 0         |  |
| Entry Pocket Length [ft]     | 100.     | 100. | 100.  | 100.  | 100. | 100.  | 100.       | 100.       | 100.      | 100.  | 100. | 100.      |  |
| No. of Lanes in Exit Pocket  | 0        | 0    | 0     | 0     | 0    | 0     | 0          | 0          | 0         | 0     | 0    | 0         |  |
| Exit Pocket Length [ft]      | 0.00     | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00       | 0.00       | 0.00      | 0.00  | 0.00 | 0.00      |  |
| Speed [mph]                  | 30.00    |      |       | 30.00 |      |       | 30.00      |            |           | 30.00 |      |           |  |
| Grade [%]                    | 0.00     |      |       | 0.00  |      |       | 0.00       |            |           | 0.00  |      |           |  |
| Crosswalk                    | Yes      |      |       | Yes   |      |       | No         |            |           | No    |      |           |  |

**Volumes**

| Name                                    | SR-57                     |      |      | Sh Ce |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 109  | 36   | 908   | 0    | 0    | 92    | 113  | 155  | 606   | 0    | 170  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 109                       | 36   | 908  | 0     | 0    | 92   | 113   | 155  | 606  | 0     | 170  | 16   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 275                       | 9    | 227  | 0     | 0    | 23   | 28    | 388  | 152  | 0     | 425  | 4    |
| Total Analysis Volume [veh/h]           | 109                       | 36   | 908  | 0     | 0    | 92   | 113   | 155  | 606  | 0     | 170  | 16   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Per | Split | Prot | Per | Unsi | Per | Per | Per |
|-------------------------|-------|-------|-------|-------|-----|-------|------|-----|------|-----|-----|-----|
| Signal Group            | 0     | 8     | 0     | 0     | 0   | 4     | 5    | 2   | 0    | 0   | 6   | 0   |
| Auxiliary Signal Groups |       |       |       |       |     |       |      |     |      |     |     |     |
| Lead / Lag              | -     | -     | -     | -     | -   | -     | Lea  | -   | -    | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.22  | 0.30 | 0.30 | 0.00 | 0.00 | 0.03 | 0.07 | 0.30 | 0.00 | 0.00 | 0.25 | 0.25 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.696 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.812 |

**Intersection Setup**

| Name                         | As Ro      |      |      | As Ro      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T     |      |      | T T T     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | As Ro                     |      |      | As Ro |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 164  | 232  | 80    | 181  | 372  | 177   | 227  | 211  | 112   | 101  | 184  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 164                       | 232  | 80   | 181   | 372  | 177  | 227   | 211  | 112  | 101   | 184  | 108  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 41                        | 58   | 20   | 45    | 93   | 44   | 57    | 528  | 28   | 25    | 461  | 27   |
| Total Analysis Volume [veh/h]           | 164                       | 232  | 80   | 181   | 372  | 177  | 227   | 211  | 112  | 101   | 184  | 108  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**





|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.09 | 0.09 | 0.05 | 0.22 | 0.10 | 0.13 | 0.44 | 0.44 | 0.06 | 0.29 | 0.29 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.812 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.690 |

**Intersection Setup**

| Name                         | PI Av  |      |       | Castlegate Lane   |      |       | Im Hi   |      |       | Im Hi   |      |       |
|------------------------------|--|------|-------|---|------|-------|---|------|-------|---|------|-------|
|                              | Northbound   |      |       | Southbound  |      |       | Eastbound   |      |       | Westbound   |      |       |
| Approach                     | Northbound   |      |       | Southbound  |      |       | Eastbound   |      |       | Westbound   |      |       |
| Lane Configuration           |  |      |       |  |      |       |  |      |       |  |      |       |
| Turning Movement             | Left   | Thru | Right | Left  | Thru | Right | Left  | Thru | Right | Left  | Thru | Right |
| Lane Width [ft]              | 12.0   | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1  | 0    | 1     | 1   | 0    | 0     | 1   | 0    | 1     | 1   | 0    | 0     |
| Entry Pocket Length [ft]     | 100.   | 100. | 100.  | 100.  | 100. | 100.  | 100.  | 100. | 100.  | 100.  | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0  | 0    | 0     | 0   | 0    | 0     | 0   | 0    | 0     | 0   | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00   | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  |
| Speed [mph]                  | 30.00  |      |       | 30.00   |      |       | 30.00   |      |       | 30.00   |      |       |
| Grade [%]                    | 0.00   |      |       | 0.00  |      |       | 0.00  |      |       | 0.00  |      |       |
| Crosswalk                    | Yes  |      |       | Yes   |      |       | No  |      |       | Yes   |      |       |

**Volumes**

| Name                                    | PI Av                     |      |      | Castlegate Lane |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-----------------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 199  | 13   | 159             | 27   | 31   | 15    | 14   | 207  | 398   | 191  | 170  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00            | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 199                       | 13   | 159  | 27              | 31   | 15   | 14    | 207  | 398  | 191   | 170  | 35   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 50                        | 3    | 40   | 7               | 8    | 4    | 4     | 519  | 100  | 48    | 426  | 9    |
| Total Analysis Volume [veh/h]           | 199                       | 13   | 159  | 27              | 31   | 15   | 14    | 207  | 398  | 191   | 170  | 35   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0               |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-------|-------|-------|-------|-------|-------|------|-----|-----|------|-----|-----|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |       |       |       |       |       |       |      |     |     |      |     |     |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.06 | 0.09 | 0.02 | 0.03 | 0.03 | 0.01 | 0.41 | 0.23 | 0.11 | 0.34 | 0.34 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.690 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.679 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | T O R      |      |      | T O R      |      |      | T O R     |      |      | T O R     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Kr Bo                     |      |      | Kr Bo |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 192  | 277  | 94    | 352  | 726  | 123   | 148  | 145  | 263   | 77   | 124  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 192                       | 277  | 94   | 352   | 726  | 123  | 148   | 145  | 263  | 77    | 124  | 96   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 48                        | 69   | 24   | 88    | 182  | 31   | 37    | 364  | 66   | 19    | 312  | 24   |
| Total Analysis Volume [veh/h]           | 192                       | 277  | 94   | 352   | 726  | 123  | 148   | 145  | 263  | 77    | 124  | 96   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.11 | 0.11 | 0.10 | 0.21 | 0.07 | 0.04 | 0.34 | 0.34 | 0.02 | 0.26 | 0.26 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.679 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.639 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |            |      |      |            |      |      |           |      |      |           |      |      |
| Lane Configuration           | 三          |      |      | 三          |      |      | 三         |      |      | 三         |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 1    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Va Av      |      |      | Va Av      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|---|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Base Volume Input [veh/h]               | 144        | 214  | 129  | 311        | 347  | 247  | 218       | 110  | 99   | 127       | 172  | 163  |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Total Hourly Volume [veh/h]             | 144        | 214  | 129  | 311        | 347  | 247  | 218       | 110  | 99   | 127       | 172  | 163  |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 36         | 54   | 32   | 78         | 87   | 62   | 55        | 277  | 25   | 32        | 430  | 41   |
| Total Analysis Volume [veh/h]           | 144        | 214  | 129  | 311        | 347  | 247  | 218       | 110  | 99   | 127       | 172  | 163  |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.06 | 0.08 | 0.09 | 0.10 | 0.15 | 0.06 | 0.22 | 0.06 | 0.04 | 0.34 | 0.10 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.639 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.812 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | K O O R    |      |      | K O O R    |      |      | K O O R   |      |      | K O O R   |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Rose Drive |      |      | Rose Drive |      |      | Im Hi     |      |      | Im Hi     |      |      |
|---|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Base Volume Input [veh/h]               | 267        | 240  | 152  | 944        | 590  | 37   | 44        | 134  | 249  | 280       | 156  | 598  |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Total Hourly Volume [veh/h]             | 267        | 240  | 152  | 944        | 590  | 37   | 44        | 134  | 249  | 280       | 156  | 598  |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 67         | 60   | 38   | 236        | 148  | 9    | 11        | 336  | 62   | 70        | 392  | 150  |
| Total Analysis Volume [veh/h]           | 267        | 240  | 152  | 944        | 590  | 37   | 44        | 134  | 249  | 280       | 156  | 598  |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.07 | 0.09 | 0.28 | 0.17 | 0.02 | 0.03 | 0.31 | 0.31 | 0.08 | 0.31 | 0.35 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.812 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.836 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     |            |      |      |            |      |      |              |      |      |              |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T        |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name                                    | St Co |      |      | St Co |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]               | 350   | 655  | 337  | 607   | 439  | 16   | 42           | 164  | 288  | 436          | 131  | 763  |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 350   | 655  | 337  | 607   | 439  | 16   | 42           | 164  | 288  | 436          | 131  | 763  |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 88    | 164  | 84   | 152   | 110  | 4    | 11           | 412  | 72   | 109          | 329  | 191  |
| Total Analysis Volume [veh/h]           | 350   | 655  | 337  | 607   | 439  | 16   | 42           | 164  | 288  | 436          | 131  | 763  |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Ove |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 6   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     | 6,7 |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.19 | 0.19 | 0.18 | 0.13 | 0.13 | 0.01 | 0.28 | 0.28 | 0.13 | 0.26 | 0.27 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.836 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.670 |

**Intersection Setup**

| Name                         | SR-57      |      |      | SR-57      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Approach   |      |      |            |      |      | Approach     |      |      |              |      |      |
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           |            |      |      | R R R      |      |      |              |      |      | R R R        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0          | 0    | 0    | 1          | 0    | 1    | 0            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | No           |      |      | No           |      |      |

**Volumes**

| Name                                    | SR-57    |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|----------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   | Approach |      |      |       |      |      | Approach     |      |      |              |      |      |
| Base Volume Input [veh/h]               | 0        | 0    | 0    | 524   | 0    | 855  | 0            | 148  | 835  | 265          | 177  | 0    |
| Base Volume Adjustment Factor           | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00     | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 0        | 0    | 0    | 524   | 0    | 855  | 0            | 148  | 835  | 265          | 177  | 0    |
| Peak Hour Factor                        | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 0        | 0    | 0    | 131   | 0    | 214  | 0            | 370  | 209  | 66           | 443  | 0    |
| Total Analysis Volume [veh/h]           | 0        | 0    | 0    | 524   | 0    | 855  | 0            | 148  | 835  | 265          | 177  | 0    |
| Pedestrian Volume [ped/h]               | 0        |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0        |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Split | Per | Split | Per | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-------|-----|-------|-----|-----|-----|------|-----|-----|
| Signal Group            | 0   | 0   | 0   | 7     | 0   | 0     | 0   | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |       |     |       |     |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | Lea   | -   | -     | -   | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.15 | 0.00 | 0.25 | 0.00 | 0.29 | 0.25 | 0.08 | 0.35 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.670 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.576 |

**Intersection Setup**

| Name                         | SR-57      |      |       | SR-57      |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
| Approach                     | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           | ⇐⇐⇐        |      |       |            |      |       | ⇐⇐⇐          |      |       | ⇐⇐⇐          |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 0          | 0    | 0     | 1            | 0    | 1     | 0            | 0    | 1     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | No         |      |       | No           |      |       | No           |      |       |

**Volumes**

| Name                                    | SR-57 |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]               | 676   | 0    | 329  | 0     | 0    | 0    | 0            | 164  | 576  | 0            | 118  | 570  |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 676   | 0    | 329  | 0     | 0    | 0    | 0            | 164  | 576  | 0            | 118  | 570  |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 0.00 |
| Total 15-Minute Volume [veh/h]          | 169   | 0    | 82   | 0     | 0    | 0    | 0            | 412  | 144  | 0            | 297  | 0    |
| Total Analysis Volume [veh/h]           | 676   | 0    | 329  | 0     | 0    | 0    | 0            | 164  | 576  | 0            | 118  | 0    |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Per | Split | Per | Per | Per | Prot | Per | Per | Per | Per | Unsi |
|-------------------------|-------|-----|-------|-----|-----|-----|------|-----|-----|-----|-----|------|
| Signal Group            | 3     | 0   | 0     | 0   | 0   | 0   | 5    | 2   | 0   | 0   | 6   | 0    |
| Auxiliary Signal Groups |       |     |       |     |     |     |      |     |     |     |     |      |
| Lead / Lag              | Lea   | -   | -     | -   | -   | -   | Lea  | -   | -   | -   | -   | -    |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.20  | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.33 | 0.33 | 0.00 | 0.23 | 0.00 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.576 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report  
Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.666 |

**Intersection Setup**

| Name                         | Pointe Drive |      |       | Pointe Drive |      |       | Lambert Road |            |       | Lambert Road |           |       |       |           |       |
|------------------------------|--------------|------|-------|--------------|------|-------|--------------|------------|-------|--------------|-----------|-------|-------|-----------|-------|
|                              | Approach     |      |       |              |      |       | Northbound   | Southbound |       |              | Eastbound |       |       | Westbound |       |
| Lane Configuration           | +            |      |       | + + +        |      |       | + + +        |            |       | + + +        |           |       | + + + |           |       |
| Turning Movement             | Left         | Thru | Right | Left         | Thru | Right | Left         | Thru       | Right | Left         | Thru      | Right | Left  | Thru      | Right |
| Lane Width [ft]              | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0       | 12.0  | 12.0         | 12.0      | 12.0  | 12.0  | 12.0      | 12.0  |
| No. of Lanes in Entry Pocket | 0            | 0    | 0     | 0            | 0    | 1     | 1            | 0          | 0     | 1            | 0         | 0     | 1     | 0         | 0     |
| Entry Pocket Length [ft]     | 100.         | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100.       | 100.  | 100.         | 100.      | 100.  | 100.  | 100.      | 100.  |
| No. of Lanes in Exit Pocket  | 0            | 0    | 0     | 0            | 0    | 0     | 0            | 0          | 0     | 0            | 0         | 0     | 0     | 0         | 0     |
| Exit Pocket Length [ft]      | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00       | 0.00  | 0.00         | 0.00      | 0.00  | 0.00  | 0.00      | 0.00  |
| Speed [mph]                  | 30.00        |      |       | 30.00        |      |       | 30.00        |            |       | 30.00        |           |       |       |           |       |
| Grade [%]                    | 0.00         |      |       | 0.00         |      |       | 0.00         |            |       | 0.00         |           |       |       |           |       |
| Crosswalk                    | Yes          |      |       | Yes          |      |       | No           |            |       | Yes          |           |       |       |           |       |

**Volumes**

| Name                                    | Pointe Drive              |      |      | Pointe Drive |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|---------------------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 124  | 0    | 30           | 120  | 0    | 447          | 204  | 223  | 42           | 16   | 172  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 124                       | 0    | 30   | 120          | 0    | 447  | 204          | 223  | 42   | 16           | 172  | 60   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 31                        | 0    | 8    | 30           | 0    | 112  | 51           | 558  | 11   | 4            | 431  | 15   |
| Total Analysis Volume [veh/h]           | 124                       | 0    | 30   | 120          | 0    | 447  | 204          | 223  | 42   | 16           | 172  | 60   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0            |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 0   | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.00 | 0.09 | 0.07 | 0.00 | 0.13 | 0.06 | 0.45 | 0.45 | 0.01 | 0.35 | 0.35 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.666 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.647 |

**Intersection Setup**

| Name                         | N As       |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound  |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T        |      |      | T T         |      |      | T T T T      |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left        | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0        | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1           | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.        | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00        | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00       |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00        |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes         |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | N As                      |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|---------------------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 147  | 59   | 23          | 88   | 112  | 144          | 47   | 213  | 216          | 27   | 153  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00        | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 147                       | 59   | 23   | 88          | 112  | 144  | 47           | 213  | 216  | 27           | 153  | 46   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 37                        | 15   | 6    | 22          | 28   | 36   | 12           | 535  | 54   | 7            | 383  | 12   |
| Total Analysis Volume [veh/h]           | 147                       | 59   | 23   | 88          | 112  | 144  | 47           | 213  | 216  | 27           | 153  | 46   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0           |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.02 | 0.02 | 0.05 | 0.08 | 0.08 | 0.01 | 0.42 | 0.13 | 0.02 | 0.31 | 0.31 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.647 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.665 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound    |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | ⏏⏏⏏        |      |      | ⏏             |      |      | ⏏⏏⏏          |      |      | ⏏⏏⏏          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left          | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0          | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1             | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.          | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00          | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00         |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00          |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes           |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | Kr Bo |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|-------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]               | 547   | 327  | 292  | 6             | 116  | 126  | 199          | 116  | 516  | 128          | 530  | 31   |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 547   | 327  | 292  | 6             | 116  | 126  | 199          | 116  | 516  | 128          | 530  | 31   |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 137   | 82   | 73   | 2             | 29   | 32   | 50           | 291  | 129  | 32           | 133  | 8    |
| Total Analysis Volume [veh/h]           | 547   | 327  | 292  | 6             | 116  | 126  | 199          | 116  | 516  | 128          | 530  | 31   |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Ove | Prot | Per | Per | Prot | Per | Ove | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 8   | 7    | 4   | 0   | 5    | 2   | 2   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     | 1,8 |      |     |     |      |     | 2,3 |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.16  | 0.19 | 0.13 | 0.00 | 0.07 | 0.07 | 0.12 | 0.34 | 0.00 | 0.04 | 0.11 | 0.11 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.665 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.559 |

**Intersection Setup**

| Name                         | Sunflower Street |      |       | Sunflower Street |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------------|------|-------|------------------|------|-------|--------------|------|-------|--------------|------|-------|
| Approach                     | Northbound       |      |       | Southbound       |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |                  |      |       |                  |      |       |              |      |       |              |      |       |
| Turning Movement             | Left             | Thru | Right | Left             | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0             | 12.0 | 12.0  | 12.0             | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1                | 0    | 0     | 0                | 0    | 1     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.             | 100. | 100.  | 100.             | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0                | 0    | 0     | 0                | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00             | 0.00 | 0.00  | 0.00             | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00            |      |       | 30.00            |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00             |      |       | 0.00             |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes              |      |       | Yes              |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name                                    | Sunflower Street |      |      | Sunflower Street |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|------------------|------|------|------------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]               | 27               | 2    | 14   | 2                | 0    | 6    | 6            | 164  | 22   | 6            | 862  | 3    |
| Base Volume Adjustment Factor           | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00 | 2.00 | 2.00             | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 27               | 2    | 14   | 2                | 0    | 6    | 6            | 164  | 22   | 6            | 862  | 3    |
| Peak Hour Factor                        | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 7                | 1    | 4    | 1                | 0    | 2    | 2            | 411  | 6    | 2            | 216  | 1    |
| Total Analysis Volume [veh/h]           | 27               | 2    | 14   | 2                | 0    | 6    | 6            | 164  | 22   | 6            | 862  | 3    |
| Pedestrian Volume [ped/h]               | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 7   | 0   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | Lea | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.49 | 0.49 | 0.00 | 0.17 | 0.17 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.559 |      |      |      |      |      |      |      |      |      |      |      |



Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.726
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C
\*\*\*\*\*

Table with columns for Street Name, Approach, Movement, Control, Rights, Min. Green, Y+R, and Lanes. Rows include Valencia Ave, North Bound, South Bound, East Bound, and West Bound movements.

Volume Module table with columns for Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, and FinalVolume.

Saturation Flow Module table with columns for Sat/Lane, Adjustment, Lanes, and Final Sat. values.

Capacity Analysis Module table with columns for Vol/Sat and Crit Moves values.

\*\*\*\*\*

**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.588 |

**Intersection Setup**

| Name                         | Santa Fe Road |      |       | Santa Fe Road |      |       | Ca Ca     |      |       | Ca Ca     |      |       |
|------------------------------|---------------|------|-------|---------------|------|-------|-----------|------|-------|-----------|------|-------|
|                              | Northbound    |      |       | Southbound    |      |       | Eastbound |      |       | Westbound |      |       |
| Lane Configuration           |               |      |       |               |      |       |           |      |       |           |      |       |
| Turning Movement             | Left          | Thru | Right | Left          | Thru | Right | Left      | Thru | Right | Left      | Thru | Right |
| Lane Width [ft]              | 12.0          | 12.0 | 12.0  | 12.0          | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0             | 0    | 0     | 0             | 0    | 0     | 1         | 0    | 0     | 1         | 0    | 1     |
| Entry Pocket Length [ft]     | 100.          | 100. | 100.  | 100.          | 100. | 100.  | 100.      | 100. | 100.  | 100.      | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0             | 0    | 0     | 0             | 0    | 0     | 0         | 0    | 0     | 0         | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00          | 0.00 | 0.00  | 0.00          | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |
| Speed [mph]                  | 30.00         |      |       | 30.00         |      |       | 30.00     |      |       | 30.00     |      |       |
| Grade [%]                    | 0.00          |      |       | 0.00          |      |       | 0.00      |      |       | 0.00      |      |       |
| Crosswalk                    | Yes           |      |       | Yes           |      |       | No        |      |       | Yes       |      |       |

**Volumes**

| Name                                    | Santa Fe Road             |      |      | Santa Fe Road |      |      | Ca Ca |      |      | Ca Ca |      |      |
|---|---------------------------|------|------|---------------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 11   | 0    | 2             | 0    | 0    | 16    | 1    | 179  | 2     | 1    | 456  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 11                        | 0    | 2    | 0             | 0    | 16   | 1     | 179  | 2    | 1     | 456  | 8    |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 3                         | 0    | 1    | 0             | 0    | 4    | 0     | 450  | 1    | 0     | 114  | 2    |
| Total Analysis Volume [veh/h]           | 11                        | 0    | 2    | 0             | 0    | 16   | 1     | 179  | 2    | 1     | 456  | 8    |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0             |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 0   | 0   | 4   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.53 | 0.53 | 0.00 | 0.13 | 0.00 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.588 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.809 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     |            |      |      |            |      |      |              |      |      |              |      |      |
| Lane Configuration           | ☞☞☞        |      |      | ☞☞☞        |      |      | ☞☞☞          |      |      | ☞☞☞          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | St Co |      |      | St Co |      |      | Birch Street |      |      | Birch Street |      |      |
|---|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]               | 157   | 456  | 188  | 374   | 415  | 346  | 305          | 863  | 173  | 171          | 109  | 713  |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 157   | 456  | 188  | 374   | 415  | 346  | 305          | 863  | 173  | 171          | 109  | 713  |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 39    | 114  | 47   | 94    | 104  | 87   | 76           | 216  | 43   | 43           | 273  | 178  |
| Total Analysis Volume [veh/h]           | 157   | 456  | 188  | 374   | 415  | 346  | 305          | 863  | 173  | 171          | 109  | 713  |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.13 | 0.11 | 0.11 | 0.12 | 0.20 | 0.09 | 0.25 | 0.10 | 0.05 | 0.32 | 0.42 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.809 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.717 |

**Intersection Setup**

| Name                         | S As       |      |       | S As       |      |       | Birch Street |      |       | Birch Street |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Approach                     |            |      |       |            |      |       |              |      |       |              |      |       |
| Lane Configuration           | ⇐⇐⇐        |      |       | ⇐          |      |       | ⇐⇐           |      |       | ⇐⇐⇐          |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 1          | 0    | 0     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name                                    | S As                      |      |      | S As |      |      | Birch Street |      |      | Birch Street |      |      |
|---|---------------------------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 532  | 35   | 396  | 11   | 22   | 10           | 16   | 101  | 332          | 324  | 141  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 532                       | 35   | 396  | 11   | 22   | 10   | 16           | 101  | 332  | 324          | 141  | 18   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 133                       | 9    | 99   | 3    | 6    | 3    | 4            | 254  | 83   | 81           | 354  | 5    |
| Total Analysis Volume [veh/h]           | 532                       | 35   | 396  | 11   | 22   | 10   | 16           | 101  | 332  | 324          | 141  | 18   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Ove | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 8   | 7   | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     | 1,8 |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.16  | 0.02 | 0.14 | 0.01 | 0.02 | 0.02 | 0.01 | 0.40 | 0.40 | 0.10 | 0.42 | 0.42 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.717 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.736 |

**Intersection Setup**

| Name                         | N As       |      |       | N As       |      |       | Birch Street |      |       | Birch Street |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |            |      |       |            |      |       |              |      |       |              |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 1          | 0    | 1     | 1            | 0    | 0     | 1            | 0    | 1     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes          |      |       | No           |      |       |

**Volumes**

| Name                                    | N As                      |      |      | N As |      |      | Birch Street |      |      | Birch Street |      |      |
|---|---------------------------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 14   | 2    | 11   | 113  | 3    | 319          | 306  | 107  | 13           | 6    | 146  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 14                        | 2    | 11   | 113  | 3    | 319  | 306          | 107  | 13   | 6            | 146  | 149  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 4                         | 1    | 3    | 28   | 1    | 80   | 77           | 268  | 3    | 2            | 366  | 37   |
| Total Analysis Volume [veh/h]           | 14                        | 2    | 11   | 113  | 3    | 319  | 306          | 107  | 13   | 6            | 146  | 149  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Ove | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-------|-------|-------|-------|-------|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5 |      |     |     |      |     |     |
| Lead / Lag              | -     | -     | -     | -     | -     | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.07 | 0.00 | 0.01 | 0.18 | 0.32 | 0.32 | 0.00 | 0.43 | 0.09 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.736 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.736 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T          |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | Kr Bo      |      |      | Kr Bo      |      |      | Birch Street |      |      | Birch Street |      |      |
|---|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Base Volume Input [veh/h]               | 642        | 841  | 141  | 239        | 434  | 132  | 254          | 839  | 317  | 87           | 804  | 234  |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 642        | 841  | 141  | 239        | 434  | 132  | 254          | 839  | 317  | 87           | 804  | 234  |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 161        | 210  | 35   | 60         | 109  | 33   | 64           | 210  | 79   | 22           | 201  | 59   |
| Total Analysis Volume [veh/h]           | 642        | 841  | 141  | 239        | 434  | 132  | 254          | 839  | 317  | 87           | 804  | 234  |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.19  | 0.19 | 0.19 | 0.07 | 0.11 | 0.11 | 0.15 | 0.25 | 0.19 | 0.05 | 0.24 | 0.14 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.736 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.161 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Birch Street |      |      | Rose Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Lane Configuration           | ↵          |      |      | ↵          |      |      | ↵↵↵          |      |      | ↵↵↵        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1          | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00       |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes        |      |      |

**Volumes**

| Name                                    | Va Av                     |      |      | Va Av |      |      | Birch Street |      |      | Rose Drive |      |      |
|---|---------------------------|------|------|-------|------|------|--------------|------|------|------------|------|------|
|   | Base Volume Input [veh/h] | 231  | 679  | 51    | 538  | 295  | 62           | 219  | 718  | 158        | 33   | 550  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]             | 231                       | 679  | 51   | 538   | 295  | 62   | 219          | 718  | 158  | 33         | 550  | 877  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 58                        | 170  | 13   | 135   | 74   | 16   | 55           | 180  | 40   | 8          | 138  | 219  |
| Total Analysis Volume [veh/h]           | 231                       | 679  | 51   | 538   | 295  | 62   | 219          | 718  | 158  | 33         | 550  | 877  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0            |      |      | 0          |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.14  | 0.21 | 0.21 | 0.32 | 0.11 | 0.11 | 0.06 | 0.26 | 0.26 | 0.02 | 0.16 | 0.52 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.161 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.867 |

**Intersection Setup**

| Name                         | Rose Drive |      |       | Rose Drive |      |       | Vesuvius Drive |      |       | Vesuvius Drive |      |       |
|------------------------------|------------|------|-------|------------|------|-------|----------------|------|-------|----------------|------|-------|
| Approach                     | Northbound |      |       | Southbound |      |       | Eastbound      |      |       | Westbound      |      |       |
| Lane Configuration           |            |      |       |            |      |       |                |      |       |                |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left           | Thru | Right | Left           | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 1     | 1          | 0    | 1     | 0              | 0    | 0     | 1              | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.           | 100. | 100.  | 100.           | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0              | 0    | 0     | 0              | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00          |      |       | 30.00          |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00           |      |       | 0.00           |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes            |      |       | Yes            |      |       |

**Volumes**

| Name                                    | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|---|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
| Base Volume Input [veh/h]               | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]             | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 8          | 321  | 8    | 3          | 326  | 4    | 2              | 0    | 5    | 7              | 0    | 3    |
| Total Analysis Volume [veh/h]           | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Signal Group            | 0   | 6   | 0   | 0   | 2   | 0   | 0   | 8   | 0   | 0   | 4   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |     |     |     |     |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.39 | 0.39 | 0.01 | 0.77 | 0.01 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.867 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.829 |

**Intersection Setup**

| Name                         |          |      |       | SR-57      |      |       | Im Hi      |      |       | Im Hi     |      |       |           |  |
|------------------------------|----------|------|-------|------------|------|-------|------------|------|-------|-----------|------|-------|-----------|--|
|                              | Approach |      |       | Northbound |      |       | Southbound |      |       | Eastbound |      |       | Westbound |  |
| Lane Configuration           |          |      |       |            |      |       |            |      |       |           |      |       |           |  |
| Turning Movement             | Left     | Thru | Right | Left       | Thru | Right | Left       | Thru | Right | Left      | Thru | Right |           |  |
| Lane Width [ft]              | 12.0     | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |           |  |
| No. of Lanes in Entry Pocket | 0        | 0    | 0     | 1          | 0    | 1     | 0          | 0    | 1     | 0         | 0    | 1     |           |  |
| Entry Pocket Length [ft]     | 100.     | 100. | 100.  | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.      | 100. | 100.  |           |  |
| No. of Lanes in Exit Pocket  | 0        | 0    | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0         | 0    | 0     |           |  |
| Exit Pocket Length [ft]      | 0.00     | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |           |  |
| Speed [mph]                  | 30.00    |      |       | 30.00      |      |       | 30.00      |      |       | 30.00     |      |       |           |  |
| Grade [%]                    | 0.00     |      |       | 0.00       |      |       | 0.00       |      |       | 0.00      |      |       |           |  |
| Crosswalk                    | No       |      |       | Yes        |      |       | No         |      |       | No        |      |       |           |  |

**Volumes**

| Name                                    |                           |      |      | SR-57 |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 0    | 0    | 0     | 735  | 0    | 605   | 0    | 191  | 110   | 0    | 263  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 0                         | 0    | 0    | 735   | 0    | 605  | 0     | 191  | 110  | 0     | 263  | 460  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 0                         | 0    | 0    | 184   | 0    | 151  | 0     | 478  | 275  | 0     | 658  | 115  |
| Total Analysis Volume [veh/h]           | 0                         | 0    | 0    | 735   | 0    | 605  | 0     | 191  | 110  | 0     | 263  | 460  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Split | Per | Split | Per | Per | Unsi | Per | Per | Unsi |
|-------------------------|-----|-----|-----|-------|-----|-------|-----|-----|------|-----|-----|------|
| Signal Group            | 0   | 0   | 0   | 7     | 0   | 0     | 0   | 2   | 0    | 0   | 6   | 0    |
| Auxiliary Signal Groups |     |     |     |       |     |       |     |     |      |     |     |      |
| Lead / Lag              | -   | -   | -   | Lea   | -   | -     | -   | -   | -    | -   | -   | -    |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.22 | 0.00 | 0.26 | 0.00 | 0.37 | 0.00 | 0.00 | 0.52 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.829 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.885 |

**Intersection Setup**

| Name                         | SR-57      |      |       | Sh Ce      |      |       | Im Hi     |      |       | Im Hi     |      |       |
|------------------------------|------------|------|-------|------------|------|-------|-----------|------|-------|-----------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound |      |       | Westbound |      |       |
| Lane Configuration           | TTT        |      |       | TT         |      |       | TTT       |      |       | TTT       |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left      | Thru | Right | Left      | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 0          | 0    | 1     | 1         | 0    | 1     | 0         | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.      | 100. | 100.  | 100.      | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0         | 0    | 0     | 0         | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00     |      |       | 30.00     |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00      |      |       | 0.00      |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | No        |      |       | No        |      |       |

**Volumes**

| Name                                    | SR-57                     |      |      | Sh Ce |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 111  | 72   | 495   | 0    | 0    | 217   | 205  | 206  | 410   | 0    | 270  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 111                       | 72   | 495  | 0     | 0    | 217  | 205   | 206  | 410  | 0     | 270  | 43   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 278                       | 18   | 124  | 0     | 0    | 54   | 51    | 515  | 103  | 0     | 677  | 11   |
| Total Analysis Volume [veh/h]           | 111                       | 72   | 495  | 0     | 0    | 217  | 205   | 206  | 410  | 0     | 270  | 43   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Per | Split | Prot | Per | Unsi | Per | Per | Per |
|-------------------------|-------|-------|-------|-------|-----|-------|------|-----|------|-----|-----|-----|
| Signal Group            | 0     | 8     | 0     | 0     | 0   | 4     | 5    | 2   | 0    | 0   | 6   | 0   |
| Auxiliary Signal Groups |       |       |       |       |     |       |      |     |      |     |     |     |
| Lead / Lag              | -     | -     | -     | -     | -   | -     | Lea  | -   | -    | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.22  | 0.25 | 0.25 | 0.00 | 0.00 | 0.06 | 0.12 | 0.40 | 0.00 | 0.00 | 0.40 | 0.40 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.885 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.905 |

**Intersection Setup**

| Name                         | As Ro      |      |      | As Ro      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T     |      |      | T T T T   |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | As Ro      |      |      | As Ro      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|---|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Base Volume Input [veh/h]               | 240        | 295  | 93   | 320        | 389  | 280  | 296       | 210  | 153  | 192       | 198  | 203  |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Total Hourly Volume [veh/h]             | 240        | 295  | 93   | 320        | 389  | 280  | 296       | 210  | 153  | 192       | 198  | 203  |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 60         | 74   | 23   | 80         | 97   | 70   | 74        | 526  | 38   | 48        | 497  | 51   |
| Total Analysis Volume [veh/h]           | 240        | 295  | 93   | 320        | 389  | 280  | 296       | 210  | 153  | 192       | 198  | 203  |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.11 | 0.11 | 0.09 | 0.23 | 0.16 | 0.17 | 0.44 | 0.44 | 0.11 | 0.32 | 0.32 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.905 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.813 |

**Intersection Setup**

| Name                         | PI Av      |      |       | Castlegate Lane |      |       | Im Hi     |      |       | Im Hi     |      |       |
|------------------------------|------------|------|-------|-----------------|------|-------|-----------|------|-------|-----------|------|-------|
|                              | Approach   |      |       |                 |      |       |           |      |       |           |      |       |
|                              | Northbound |      |       | Southbound      |      |       | Eastbound |      |       | Westbound |      |       |
| Lane Configuration           |            |      |       |                 |      |       |           |      |       |           |      |       |
| Turning Movement             | Left       | Thru | Right | Left            | Thru | Right | Left      | Thru | Right | Left      | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0            | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 1               | 0    | 0     | 1         | 0    | 1     | 1         | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.            | 100. | 100.  | 100.      | 100. | 100.  | 100.      | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0               | 0    | 0     | 0         | 0    | 0     | 0         | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00            | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00           |      |       | 30.00     |      |       | 30.00     |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00            |      |       | 0.00      |      |       | 0.00      |      |       |
| Crosswalk                    | Yes        |      |       | Yes             |      |       | No        |      |       | Yes       |      |       |

**Volumes**

| Name                                    | PI Av                     |      |      | Castlegate Lane |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-----------------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 276  | 51   | 295             | 28   | 25   | 15    | 21   | 212  | 308   | 255  | 217  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00            | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 276                       | 51   | 295  | 28              | 25   | 15   | 21    | 212  | 308  | 255   | 217  | 63   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 69                        | 13   | 74   | 7               | 6    | 4    | 5     | 531  | 77   | 64    | 544  | 16   |
| Total Analysis Volume [veh/h]           | 276                       | 51   | 295  | 28              | 25   | 15   | 21    | 212  | 308  | 255   | 217  | 63   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0               |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-------|-------|-------|-------|-------|-------|------|-----|-----|------|-----|-----|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |       |       |       |       |       |       |      |     |     |      |     |     |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.10 | 0.17 | 0.02 | 0.02 | 0.02 | 0.01 | 0.42 | 0.18 | 0.15 | 0.44 | 0.44 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.813 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.853 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | T O R      |      |      | T O R      |      |      | T O R     |      |      | T O R     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Kr Bo                     |      |      | Kr Bo |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 398  | 702  | 112   | 286  | 535  | 128   | 236  | 160  | 239   | 201  | 174  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 398                       | 702  | 112  | 286   | 535  | 128  | 236   | 160  | 239  | 201   | 174  | 347  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 100                       | 176  | 28   | 72    | 134  | 32   | 59    | 400  | 60   | 50    | 436  | 87   |
| Total Analysis Volume [veh/h]           | 398                       | 702  | 112  | 286   | 535  | 128  | 236   | 160  | 239  | 201   | 174  | 347  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.12  | 0.24 | 0.24 | 0.08 | 0.16 | 0.08 | 0.07 | 0.36 | 0.36 | 0.06 | 0.41 | 0.41 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.853 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.657 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |            |      |      |            |      |      |           |      |      |           |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram] |      |      | [Diagram] |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 1    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Va Av                     |      |      | Va Av |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 125  | 331  | 138   | 240  | 260  | 168   | 297  | 197  | 163   | 180  | 146  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 125                       | 331  | 138  | 240   | 260  | 168  | 297   | 197  | 163  | 180   | 146  | 160  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 31                        | 83   | 35   | 60    | 65   | 42   | 74    | 493  | 41   | 45    | 367  | 40   |
| Total Analysis Volume [veh/h]           | 125                       | 331  | 138  | 240   | 260  | 168  | 297   | 197  | 163  | 180   | 146  | 160  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.10 | 0.08 | 0.07 | 0.08 | 0.10 | 0.09 | 0.39 | 0.10 | 0.05 | 0.29 | 0.09 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.657 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.099 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Approach   |      |      |            |      |      | Approach  |      |      |           |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram] |      |      | [Diagram] |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Rose Drive                |      |      | Rose Drive |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|------------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 271  | 630  | 129        | 100  | 526  | 32    | 87   | 191  | 300   | 168  | 149  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 271                       | 630  | 129  | 100        | 526  | 32   | 87    | 191  | 300  | 168   | 149  | 879  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 68                        | 158  | 32   | 251        | 132  | 8    | 22    | 479  | 75   | 42    | 374  | 220  |
| Total Analysis Volume [veh/h]           | 271                       | 630  | 129  | 100        | 526  | 32   | 87    | 191  | 300  | 168   | 149  | 879  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0          |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.19 | 0.08 | 0.30 | 0.15 | 0.02 | 0.05 | 0.43 | 0.43 | 0.05 | 0.29 | 0.52 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.099 |      |      |      |      |      |      |      |      |      |      |      |

*APPENDIX C-IV*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
WITH MITIGATION TRAFFIC CONDITIONS**

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.830
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 59 Level Of Service: D
\*\*\*\*\*

Street Name: Valencia Ave Lambert Rd/Carbon Canyon Rd
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Protected Protected
Rights: Ignore Include Ovl Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 1 1 0 1 1 0 1 1 0 1 2 0 2 1 0

Volume Module:
Base Vol: 355 198 180 8 402 46 53 248 591 1022 870 2
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 355 198 180 8 402 46 53 248 591 1022 870 2
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 355 198 180 8 402 46 53 248 591 1022 870 2
User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 355 198 0 8 402 46 53 248 591 1022 870 2
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 355 198 0 8 402 46 53 248 591 1022 870 2
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 355 198 0 8 402 46 53 248 591 1022 870 2
OvlAdjVol: 407

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.93 1.07 1.00 1.00 1.79 0.21 1.00 3.00 1.00 2.00 2.99 0.01
Final Sat.: 3274 1826 1700 1700 3051 349 1700 5100 1700 3400 5088 12

Capacity Analysis Module:
Vol/Sat: 0.11 0.11 0.00 0.00 0.13 0.13 0.03 0.05 0.35 0.30 0.17 0.17
OvlAdjV/S: 0.24
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*
\*\*\*\*\*

**Intersection Level Of Service Report**  
**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.727 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 149             | 259    | 26     | 879             | 946    | 300    | 79           | 520    | 149    | 44         | 430    | 391    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 149             | 259    | 26     | 879             | 946    | 300    | 79           | 520    | 149    | 44         | 430    | 391    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 37              | 65     | 7      | 220             | 237    | 75     | 20           | 130    | 37     | 11         | 108    | 98     |
| Total Analysis Volume [veh/h]           | 149             | 259    | 26     | 879             | 946    | 300    | 79           | 520    | 149    | 44         | 430    | 391    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |



Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.08 | 0.08 | 0.26 | 0.37 | 0.37 | 0.02 | 0.20 | 0.20 | 0.03 | 0.13 | 0.00 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.727 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.548 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↵↵        |        |        | ↵↵↵        |        |        | ⊕              |        |        | ↵↵             |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 11         | 809    | 15     | 6          | 1495   | 11     | 9              | 0      | 38     | 35             | 0      | 13     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 11         | 809    | 15     | 6          | 1495   | 11     | 9              | 0      | 38     | 35             | 0      | 13     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3          | 202    | 4      | 2          | 374    | 3      | 2              | 0      | 10     | 9              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 11         | 809    | 15     | 6          | 1495   | 11     | 9              | 0      | 38     | 35             | 0      | 13     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.24 | 0.24 | 0.00 | 0.44 | 0.44 | 0.01 | 0.00 | 0.03 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.548 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.755 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 164                | 232    | 80     | 181                | 372    | 177    | 227              | 2110   | 112    | 101              | 1844   | 108    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 164                | 232    | 80     | 181                | 372    | 177    | 227              | 2110   | 112    | 101              | 1844   | 108    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 41                 | 58     | 20     | 45                 | 93     | 44     | 57               | 528    | 28     | 25               | 461    | 27     |
| Total Analysis Volume [veh/h]           | 164                | 232    | 80     | 181                | 372    | 177    | 227              | 2110   | 112    | 101              | 1844   | 108    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.09 | 0.09 | 0.05 | 0.16 | 0.16 | 0.13 | 0.44 | 0.44 | 0.06 | 0.29 | 0.29 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.755 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.800 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 267        | 240    | 152    | 944        | 590    | 37     | 44               | 1345   | 249    | 280              | 1569   | 598    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 267        | 240    | 152    | 944        | 590    | 37     | 44               | 1345   | 249    | 280              | 1569   | 598    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 67         | 60     | 38     | 236        | 148    | 9      | 11               | 336    | 62     | 70               | 392    | 150    |
| Total Analysis Volume [veh/h]           | 267        | 240    | 152    | 944        | 590    | 37     | 44               | 1345   | 249    | 280              | 1569   | 598    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         | 4,6     |
| Lead / Lag              | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.07 | 0.09 | 0.19 | 0.23 | 0.02 | 0.03 | 0.31 | 0.31 | 0.08 | 0.31 | 0.17 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.800 |      |      |      |      |      |      |      |      |      |      |      |

```

-----
Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
*****
Cycle (sec):      100          Critical Vol./Cap.(X):      0.607
Loss Time (sec):  5           Average Delay (sec/veh):    xxxxxx
Optimal Cycle:   29           Level Of Service:          B
*****
Street Name:      Valencia Ave          Lambert Rd/Carbon Canyon Rd
Approach:         North Bound          South Bound          East Bound          West Bound
Movement:        L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:         Split Phase          Split Phase          Protected          Protected
Rights:          Ignore              Include              Include              Include
Min. Green:      0 0 0              0 0 0              0 0 0              0 0 0
Y+R:            4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0        4.0 4.0 4.0
Lanes:          1 1 1 0 1          1 0 1 1 0          1 0 3 0 1          2 0 2 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:        404 154 840        26 118 36          31 915 573        189 357 9
Growth Adj:     1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
Initial Bse:     404 154 840        26 118 36          31 915 573        189 357 9
Added Vol:       0 0 0              0 0 0              0 0 0              0 0 0
PasserByVol:    0 0 0              0 0 0              0 0 0              0 0 0
Initial Fut:     404 154 840        26 118 36          31 915 573        189 357 9
User Adj:       1.00 1.00 0.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Adj:        1.00 1.00 0.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
PHF Volume:     404 154 0          26 118 36          31 915 573        189 357 9
Reduct Vol:     0 0 0              0 0 0              0 0 0              0 0 0
Reduced Vol:    404 154 0          26 118 36          31 915 573        189 357 9
PCE Adj:        1.00 1.00 0.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
MLF Adj:        1.00 1.00 0.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
FinalVolume:    404 154 0          26 118 36          31 915 573        189 357 9
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:       1700 1700 1700    1700 1700 1700    1700 1700 1700    1700 1700 1700
Adjustment:     1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00    1.00 1.00 1.00
Lanes:          2.00 1.00 1.00    1.00 1.53 0.47    1.00 3.00 1.00    2.00 2.93 0.07
Final Sat.:     3400 1700 1700    1700 2605 795    1700 5100 1700    3400 4975 125
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:        0.12 0.09 0.00    0.02 0.05 0.05    0.02 0.18 0.34    0.06 0.07 0.07
Crit Moves:     ****              ****              ****              ****
*****

```



**Intersection Level Of Service Report**  
**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.845 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 231             | 679    | 51     | 538             | 295    | 62     | 219          | 718    | 158    | 33         | 550    | 877    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 231             | 679    | 51     | 538             | 295    | 62     | 219          | 718    | 158    | 33         | 550    | 877    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 58              | 170    | 13     | 135             | 74     | 16     | 55           | 180    | 40     | 8          | 138    | 219    |
| Total Analysis Volume [veh/h]           | 231             | 679    | 51     | 538             | 295    | 62     | 219          | 718    | 158    | 33         | 550    | 877    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.14  | 0.21 | 0.21 | 0.16 | 0.11 | 0.11 | 0.06 | 0.26 | 0.26 | 0.02 | 0.16 | 0.36 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.845 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.489 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↱         |        |        | ↵↱         |        |        | +              |        |        | ↵↱             |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 30         | 1283   | 33     | 13         | 1304   | 17     | 8              | 0      | 21     | 26             | 0      | 10     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 30         | 1283   | 33     | 13         | 1304   | 17     | 8              | 0      | 21     | 26             | 0      | 10     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8          | 321    | 8      | 3          | 326    | 4      | 2              | 0      | 5      | 7              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 30         | 1283   | 33     | 13         | 1304   | 17     | 8              | 0      | 21     | 26             | 0      | 10     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.39 | 0.39 | 0.01 | 0.39 | 0.39 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.489 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.873 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 240                | 295    | 93     | 320                | 389    | 280    | 296              | 2105   | 153    | 192              | 1988   | 203    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 240                | 295    | 93     | 320                | 389    | 280    | 296              | 2105   | 153    | 192              | 1988   | 203    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 60                 | 74     | 23     | 80                 | 97     | 70     | 74               | 526    | 38     | 48               | 497    | 51     |
| Total Analysis Volume [veh/h]           | 240                | 295    | 93     | 320                | 389    | 280    | 296              | 2105   | 153    | 192              | 1988   | 203    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.11 | 0.11 | 0.09 | 0.20 | 0.20 | 0.17 | 0.44 | 0.44 | 0.11 | 0.32 | 0.32 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.873 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.029 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 271        | 630    | 129    | 1005       | 526    | 32     | 87               | 1916   | 300    | 168              | 1496   | 879    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 271        | 630    | 129    | 1005       | 526    | 32     | 87               | 1916   | 300    | 168              | 1496   | 879    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 68         | 158    | 32     | 251        | 132    | 8      | 22               | 479    | 75     | 42               | 374    | 220    |
| Total Analysis Volume [veh/h]           | 271        | 630    | 129    | 1005       | 526    | 32     | 87               | 1916   | 300    | 168              | 1496   | 879    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         | 4,6     |
| Lead / Lag              | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.19 | 0.08 | 0.20 | 0.31 | 0.02 | 0.05 | 0.43 | 0.43 | 0.05 | 0.29 | 0.32 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.029 |      |      |      |      |      |      |      |      |      |      |      |



*APPENDIX C-V*

**YEAR 2045 TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.869 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 194                     | 250    | 236    | 1011                    | 692    | 9      | 16           | 1577   | 238    | 542          | 1995   | 627    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 194                     | 250    | 236    | 1011                    | 692    | 9      | 16           | 1577   | 238    | 542          | 1995   | 627    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 49                      | 63     | 59     | 253                     | 173    | 2      | 4            | 394    | 60     | 136          | 499    | 157    |
| Total Analysis Volume [veh/h]           | 194                     | 250    | 236    | 1011                    | 692    | 9      | 16           | 1577   | 238    | 542          | 1995   | 627    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.10 | 0.10 | 0.30 | 0.21 | 0.21 | 0.00 | 0.27 | 0.27 | 0.16 | 0.39 | 0.07 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.869 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.821 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                |        |        | T T T T        |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1              | 0      | 1      | 0            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 1060           | 0      | 730    | 0            | 1937   | 650    | 269          | 2247   | 0      |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 1060           | 0      | 730    | 0            | 1937   | 650    | 269          | 2247   | 0      |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 265            | 0      | 183    | 0            | 484    | 163    | 67           | 562    | 0      |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 1060           | 0      | 730    | 0            | 1937   | 650    | 269          | 2247   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.31 | 0.00 | 0.21 | 0.00 | 0.38 | 0.19 | 0.08 | 0.44 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.821 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.877 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇌⇌⇌            |        |        |                |        |        | ⇌⇌⇌          |        |        | ⇌⇌⇌          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 1104           | 0      | 527    | 0              | 0      | 0      | 0            | 2563   | 424    | 0            | 1412   | 511    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 1104           | 0      | 527    | 0              | 0      | 0      | 0            | 2563   | 424    | 0            | 1412   | 511    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]          | 276            | 0      | 132    | 0              | 0      | 0      | 0            | 641    | 106    | 0            | 353    | 0      |
| Total Analysis Volume [veh/h]           | 1104           | 0      | 527    | 0              | 0      | 0      | 0            | 2563   | 424    | 0            | 1412   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Unsigna |
|-------------------------|-------|---------|-------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 3     | 0       | 0     | 0       | 0       | 0       | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |         |       |         |         |         |          |         |         |         |         |         |
| Lead / Lag              | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.32  | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.50 | 0.25 | 0.00 | 0.28 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.877 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.690 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | + + +        |        |        | + + +        |        |        | + + +        |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2563   | 42     | 18           | 1915   | 192    |
| Base Volume Adjustment Factor           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2563   | 42     | 18           | 1915   | 192    |
| Peak Hour Factor                        | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 2            | 2      | 2      | 17           | 0      | 34     | 146          | 641    | 11     | 5            | 479    | 48     |
| Total Analysis Volume [veh/h]           | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2563   | 42     | 18           | 1915   | 192    |
| Pedestrian Volume [ped/h]               | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.01 | 0.01 | 0.04 | 0.04 | 0.04 | 0.17 | 0.51 | 0.51 | 0.01 | 0.41 | 0.41 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.690 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.804 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 169               | 322    | 11     | 125         | 218    | 405    | 500          | 2031   | 173    | 23           | 1470   | 183    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 169               | 322    | 11     | 125         | 218    | 405    | 500          | 2031   | 173    | 23           | 1470   | 183    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 42                | 81     | 3      | 31          | 55     | 101    | 125          | 508    | 43     | 6            | 368    | 46     |
| Total Analysis Volume [veh/h]           | 169               | 322    | 11     | 125         | 218    | 405    | 500          | 2031   | 173    | 23           | 1470   | 183    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.10 | 0.10 | 0.07 | 0.18 | 0.18 | 0.15 | 0.40 | 0.10 | 0.01 | 0.32 | 0.32 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.804 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.716 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 322               | 130    | 34     | 22            | 236    | 373    | 111          | 777    | 1240   | 277          | 869    | 14     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 322               | 130    | 34     | 22            | 236    | 373    | 111          | 777    | 1240   | 277          | 869    | 14     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 81                | 33     | 9      | 6             | 59     | 93     | 28           | 194    | 310    | 69           | 217    | 4      |
| Total Analysis Volume [veh/h]           | 322               | 130    | 34     | 22            | 236    | 373    | 111          | 777    | 1240   | 277          | 869    | 14     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.08 | 0.00 | 0.01 | 0.14 | 0.22 | 0.07 | 0.23 | 0.27 | 0.08 | 0.17 | 0.17 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.716 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.352 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 48               | 6      | 19     | 5                | 0      | 6      | 7            | 828    | 51     | 26           | 1143   | 2      |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 48               | 6      | 19     | 5                | 0      | 6      | 7            | 828    | 51     | 26           | 1143   | 2      |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 12               | 2      | 5      | 1                | 0      | 2      | 2            | 207    | 13     | 7            | 286    | 1      |
| Total Analysis Volume [veh/h]           | 48               | 6      | 19     | 5                | 0      | 6      | 7            | 828    | 51     | 26           | 1143   | 2      |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.26 | 0.26 | 0.02 | 0.22 | 0.22 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.352 |      |      |      |      |      |      |      |      |      |      |      |

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          1.023
Loss Time (sec):      5           Average Delay (sec/veh):          xxxxxx
Optimal Cycle:        180          Level Of Service:          F
*****
Street Name:          Valencia Ave          Lambert Rd/Carbon Canyon Rd
Approach:              North Bound          South Bound          East Bound          West Bound
Movement:              L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:               Protected          Protected          Protected          Protected
Rights:                Ignore           Include           Include           Include
Min. Green:            0 0 0           0 0 0           0 0 0           0 0 0
Y+R:                   4.0 4.0 4.0     4.0 4.0 4.0     4.0 4.0 4.0     4.0 4.0 4.0
Lanes:                 1 0 2 0 1       1 0 1 1 0       1 0 2 1 0       2 0 2 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:              316 208 174     8 422 48        56 248 572     1063 909 2
Growth Adj:            1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:           316 208 174     8 422 48        56 248 572     1063 909 2
Added Vol:              0 0 0           0 0 0           0 0 0           0 0 0
PasserByVol:           0 0 0           0 0 0           0 0 0           0 0 0
Initial Fut:           316 208 174     8 422 48        56 248 572     1063 909 2
User Adj:              1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:            316 208 0         8 422 48        56 248 572     1063 909 2
Reduct Vol:            0 0 0           0 0 0           0 0 0           0 0 0
Reduced Vol:           316 208 0         8 422 48        56 248 572     1063 909 2
PCE Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:           316 208 0         8 422 48        56 248 572     1063 909 2
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:            1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:                 1.00 2.00 1.00  1.00 1.80 0.20  1.00 2.00 1.00  2.00 2.99 0.01
Final Sat.:            1700 3400 1700  1700 3053 347  1700 3400 1700  3400 5089 11
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.19 0.06 0.00  0.00 0.14 0.14  0.03 0.07 0.34  0.31 0.18 0.18
Crit Moves:           ****              ****              ****              ****
*****

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**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.652 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ↱             |        |        | ↵↶                 |        |        | ↵↷                 |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name                                    | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Base Volume Input [veh/h]               | 5             | 1      | 1      | 0             | 0      | 29     | 22                 | 415    | 8      | 7                  | 1989   | 6      |
| Base Volume Adjustment Factor           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                    | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]             | 5             | 1      | 1      | 0             | 0      | 29     | 22                 | 415    | 8      | 7                  | 1989   | 6      |
| Peak Hour Factor                        | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1             | 0      | 0      | 0             | 0      | 7      | 6                  | 104    | 2      | 2                  | 497    | 2      |
| Total Analysis Volume [veh/h]           | 5             | 1      | 1      | 0             | 0      | 29     | 22                 | 415    | 8      | 7                  | 1989   | 6      |
| Pedestrian Volume [ped/h]               | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]             | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.01 | 0.12 | 0.12 | 0.00 | 0.59 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.652 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.599 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | [Diagram]               |        |        | [Diagram]               |        |        | [Diagram]    |        |        | [Diagram]    |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 88                      | 177    | 112    | 776                     | 976    | 254    | 125          | 576    | 68     | 92           | 651    | 338    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 88                      | 177    | 112    | 776                     | 976    | 254    | 125          | 576    | 68     | 92           | 651    | 338    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 22                      | 44     | 28     | 194                     | 244    | 64     | 31           | 144    | 17     | 23           | 163    | 85     |
| Total Analysis Volume [veh/h]           | 88                      | 177    | 112    | 776                     | 976    | 254    | 125          | 576    | 68     | 92           | 651    | 338    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.05 | 0.07 | 0.23 | 0.29 | 0.15 | 0.04 | 0.17 | 0.04 | 0.03 | 0.19 | 0.20 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.599 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.729 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐           |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 286               | 7      | 357    | 63                | 34     | 11     | 5            | 1094   | 374    | 389          | 872    | 11     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 286               | 7      | 357    | 63                | 34     | 11     | 5            | 1094   | 374    | 389          | 872    | 11     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 72                | 2      | 89     | 16                | 9      | 3      | 1            | 274    | 94     | 97           | 218    | 3      |
| Total Analysis Volume [veh/h]           | 286               | 7      | 357    | 63                | 34     | 11     | 5            | 1094   | 374    | 389          | 872    | 11     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.00 | 0.10 | 0.04 | 0.03 | 0.03 | 0.00 | 0.43 | 0.43 | 0.11 | 0.26 | 0.26 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.729 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.626 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 3                 | 3      | 6      | 187               | 2      | 524    | 371          | 1006   | 19     | 9            | 829    | 99     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 3                 | 3      | 6      | 187               | 2      | 524    | 371          | 1006   | 19     | 9            | 829    | 99     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1                 | 1      | 2      | 47                | 1      | 131    | 93           | 252    | 5      | 2            | 207    | 25     |
| Total Analysis Volume [veh/h]           | 3                 | 3      | 6      | 187               | 2      | 524    | 371          | 1006   | 19     | 9            | 829    | 99     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.11 | 0.00 | 0.09 | 0.22 | 0.30 | 0.30 | 0.01 | 0.24 | 0.06 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.626 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.635 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 155               | 243    | 106    | 504               | 1161   | 210    | 50           | 673    | 388    | 72           | 493    | 240    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 155               | 243    | 106    | 504               | 1161   | 210    | 50           | 673    | 388    | 72           | 493    | 240    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 39                | 61     | 27     | 126               | 290    | 53     | 13           | 168    | 97     | 18           | 123    | 60     |
| Total Analysis Volume [veh/h]           | 155               | 243    | 106    | 504               | 1161   | 210    | 50           | 673    | 388    | 72           | 493    | 240    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.07 | 0.07 | 0.15 | 0.27 | 0.27 | 0.03 | 0.20 | 0.23 | 0.04 | 0.15 | 0.14 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.635 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.870 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 155             | 251    | 16     | 860             | 939    | 292    | 72           | 529    | 149    | 15         | 407    | 365    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 155             | 251    | 16     | 860             | 939    | 292    | 72           | 529    | 149    | 15         | 407    | 365    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 39              | 63     | 4      | 215             | 235    | 73     | 18           | 132    | 37     | 4          | 102    | 91     |
| Total Analysis Volume [veh/h]           | 155             | 251    | 16     | 860             | 939    | 292    | 72           | 529    | 149    | 15         | 407    | 365    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |




**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.08 | 0.08 | 0.51 | 0.36 | 0.36 | 0.02 | 0.20 | 0.20 | 0.01 | 0.12 | 0.21 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.870 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.069 |

**Intersection Setup**

| Name                         | Rose Drive  |        | Rose Drive   |        | Vesuvius Drive  |        |
|------------------------------|---|--------|--|--------|---|--------|
| Approach                     | Northbound  |        | Southbound   |        | Eastbound   |        |
| Lane Configuration           |  |        |  |        |  |        |
| Turning Movement             | Left  | Thru   | Thru   | Right  | Left  | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00  | 12.00   | 12.00  |
| No. of Lanes in Entry Pocket | 0   | 1      | 0  | 1      | 0   | 0      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00   | 100.00 | 100.00  | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0  | 0      | 0   | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   |
| Speed [mph]                  | 30.00   |        | 30.00  |        | 30.00   |        |
| Grade [%]                    | 0.00  |        | 0.00   |        | 0.00  |        |
| Crosswalk                    | Yes   |        | No   |        | Yes   |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
| Base Volume Input [veh/h]               | 54         | 792    | 1410       | 67     | 61             | 207    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]             | 54         | 792    | 1410       | 67     | 61             | 207    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 14         | 198    | 353        | 17     | 15             | 52     |
| Total Analysis Volume [veh/h]           | 54         | 792    | 1410       | 67     | 61             | 207    |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0              |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |            |            |            |            |            |            |
|-------------------------|------------|------------|------------|------------|------------|------------|
| Control Type            | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |            |            |            |            |            |            |
| Lead / Lag              | -          | -          | -          | -          | Lead       | -          |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.47 | 0.83 | 0.04 | 0.04 | 0.16 |
| Intersection LOS        | F     |      |      |      |      |      |
| Intersection V/C        | 1.069 |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.732 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ↵↵↵              |        |        | ↵                |        |        | ↵         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |        |        |        |
|---|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|--------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 682              | 0      | 572    | 0                | 1739   | 830    | 0      | 2223   | 220    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00   | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0      | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 682              | 0      | 572    | 0                | 1739   | 830    | 0      | 2223   | 220    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 171              | 0      | 143    | 0                | 435    | 208    | 0      | 556    | 55     |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 682              | 0      | 572    | 0                | 1739   | 830    | 0      | 2223   | 220    |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0                |        |        | 0                |        |        | 0      |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.20 | 0.00 | 0.25 | 0.00 | 0.34 | 0.00 | 0.00 | 0.44 | 0.00 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.732 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.706 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 1153           | 43     | 945    | 0               | 0      | 51     | 118              | 1549   | 636    | 0                | 1730   | 18     |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 1153           | 43     | 945    | 0               | 0      | 51     | 118              | 1549   | 636    | 0                | 1730   | 18     |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 288            | 11     | 236    | 0               | 0      | 13     | 30               | 387    | 159    | 0                | 433    | 5      |
| Total Analysis Volume [veh/h]           | 1153           | 43     | 945    | 0               | 0      | 51     | 118              | 1549   | 636    | 0                | 1730   | 18     |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag              | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.23  | 0.31 | 0.31 | 0.00 | 0.00 | 0.02 | 0.07 | 0.30 | 0.00 | 0.00 | 0.26 | 0.26 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.706 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.830 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐                |        |        | ⇐⇐⇐                |        |        | ⇐⇐⇐              |        |        | ⇐⇐⇐⇐             |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 172                | 236    | 93     | 190                | 370    | 186    | 238              | 2185   | 117    | 103              | 1795   | 112    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 172                | 236    | 93     | 190                | 370    | 186    | 238              | 2185   | 117    | 103              | 1795   | 112    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 43                 | 59     | 23     | 48                 | 93     | 47     | 60               | 546    | 29     | 26               | 449    | 28     |
| Total Analysis Volume [veh/h]           | 172                | 236    | 93     | 190                | 370    | 186    | 238              | 2185   | 117    | 103              | 1795   | 112    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.10 | 0.10 | 0.06 | 0.22 | 0.11 | 0.14 | 0.45 | 0.45 | 0.06 | 0.28 | 0.28 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.830 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.719 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐              |        |        | ⇐⇐              |        |        | ⇐⇐⇐⇐⇐            |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2159   | 488    | 201              | 1729   | 37     |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2159   | 488    | 201              | 1729   | 37     |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 51               | 4      | 42     | 7               | 8      | 4      | 4                | 540    | 122    | 50               | 432    | 9      |
| Total Analysis Volume [veh/h]           | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2159   | 488    | 201              | 1729   | 37     |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.06 | 0.10 | 0.02 | 0.03 | 0.03 | 0.01 | 0.42 | 0.29 | 0.12 | 0.35 | 0.35 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.719 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.694 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O R             |        |        | O L R             |        |        | T O R            |        |        | T O R            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 202               | 269    | 99     | 413               | 724    | 148    | 155              | 1500   | 276    | 81               | 1241   | 101    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 202               | 269    | 99     | 413               | 724    | 148    | 155              | 1500   | 276    | 81               | 1241   | 101    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 51                | 67     | 25     | 103               | 181    | 37     | 39               | 375    | 69     | 20               | 310    | 25     |
| Total Analysis Volume [veh/h]           | 202               | 269    | 99     | 413               | 724    | 148    | 155              | 1500   | 276    | 81               | 1241   | 101    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.11 | 0.11 | 0.12 | 0.21 | 0.09 | 0.05 | 0.35 | 0.35 | 0.02 | 0.26 | 0.26 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.694 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.625 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]       |        |        | [Diagram]       |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 151             | 203    | 135    | 306             | 305    | 200    | 199              | 1142   | 99     | 133              | 1771   | 164    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 151             | 203    | 135    | 306             | 305    | 200    | 199              | 1142   | 99     | 133              | 1771   | 164    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 38              | 51     | 34     | 77              | 76     | 50     | 50               | 286    | 25     | 33               | 443    | 41     |
| Total Analysis Volume [veh/h]           | 151             | 203    | 135    | 306             | 305    | 200    | 199              | 1142   | 99     | 133              | 1771   | 164    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.06 | 0.08 | 0.09 | 0.09 | 0.12 | 0.06 | 0.22 | 0.06 | 0.04 | 0.35 | 0.10 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.625 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.834 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 280        | 216    | 160    | 940        | 531    | 24     | 40               | 1391   | 277    | 294              | 1639   | 607    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 280        | 216    | 160    | 940        | 531    | 24     | 40               | 1391   | 277    | 294              | 1639   | 607    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 70         | 54     | 40     | 235        | 133    | 6      | 10               | 348    | 69     | 74               | 410    | 152    |
| Total Analysis Volume [veh/h]           | 280        | 216    | 160    | 940        | 531    | 24     | 40               | 1391   | 277    | 294              | 1639   | 607    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.06 | 0.09 | 0.28 | 0.16 | 0.01 | 0.02 | 0.33 | 0.33 | 0.09 | 0.32 | 0.36 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.834 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.862 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | TTT                     |        |        | TTT                     |        |        | TTT          |        |        | TTT          |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 368                     | 688    | 353    | 637                     | 461    | 17     | 44           | 1644   | 302    | 457          | 1330   | 801    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 368                     | 688    | 353    | 637                     | 461    | 17     | 44           | 1644   | 302    | 457          | 1330   | 801    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 92                      | 172    | 88     | 159                     | 115    | 4      | 11           | 411    | 76     | 114          | 333    | 200    |
| Total Analysis Volume [veh/h]           | 368                     | 688    | 353    | 637                     | 461    | 17     | 44           | 1644   | 302    | 457          | 1330   | 801    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.11  | 0.20 | 0.20 | 0.19 | 0.14 | 0.14 | 0.01 | 0.29 | 0.29 | 0.13 | 0.26 | 0.28 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.862 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.677 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                |        |        | T T T T        |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1              | 0      | 1      | 0            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 427            | 0      | 897    | 0            | 1466   | 877    | 256          | 1807   | 0      |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 427            | 0      | 897    | 0            | 1466   | 877    | 256          | 1807   | 0      |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 107            | 0      | 224    | 0            | 367    | 219    | 64           | 452    | 0      |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 427            | 0      | 897    | 0            | 1466   | 877    | 256          | 1807   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.13 | 0.00 | 0.26 | 0.00 | 0.29 | 0.26 | 0.08 | 0.35 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.677 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.571 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇌⇌⇌            |        |        |                |        |        | ⇌⇌⇌          |        |        | ⇌⇌⇌          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 710            | 0      | 302    | 0              | 0      | 0      | 0            | 1519   | 605    | 0            | 1166   | 526    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 710            | 0      | 302    | 0              | 0      | 0      | 0            | 1519   | 605    | 0            | 1166   | 526    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]          | 178            | 0      | 76     | 0              | 0      | 0      | 0            | 380    | 151    | 0            | 292    | 0      |
| Total Analysis Volume [veh/h]           | 710            | 0      | 302    | 0              | 0      | 0      | 0            | 1519   | 605    | 0            | 1166   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Unsigna |
|-------------------------|-------|---------|-------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 3     | 0       | 0     | 0       | 0       | 0       | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |         |       |         |         |         |          |         |         |         |         |         |
| Lead / Lag              | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.21  | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.31 | 0.31 | 0.00 | 0.23 | 0.00 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.571 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.648 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | + + +        |        |        | + + +        |        |        | + + +        |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 130          | 0      | 32     | 126          | 0      | 469    | 214          | 2091   | 44     | 17           | 1653   | 63     |
| Base Volume Adjustment Factor           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 130          | 0      | 32     | 126          | 0      | 469    | 214          | 2091   | 44     | 17           | 1653   | 63     |
| Peak Hour Factor                        | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 33           | 0      | 8      | 32           | 0      | 117    | 54           | 523    | 11     | 4            | 413    | 16     |
| Total Analysis Volume [veh/h]           | 130          | 0      | 32     | 126          | 0      | 469    | 214          | 2091   | 44     | 17           | 1653   | 63     |
| Pedestrian Volume [ped/h]               | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.00 | 0.10 | 0.07 | 0.00 | 0.14 | 0.06 | 0.42 | 0.42 | 0.01 | 0.34 | 0.34 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.648 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.626 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 154               | 62     | 23     | 92          | 118    | 151    | 49           | 1994   | 227    | 26           | 1454   | 48     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 154               | 62     | 23     | 92          | 118    | 151    | 49           | 1994   | 227    | 26           | 1454   | 48     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 39                | 16     | 6      | 23          | 30     | 38     | 12           | 499    | 57     | 7            | 364    | 12     |
| Total Analysis Volume [veh/h]           | 154               | 62     | 23     | 92          | 118    | 151    | 49           | 1994   | 227    | 26           | 1454   | 48     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.03 | 0.03 | 0.05 | 0.08 | 0.08 | 0.01 | 0.39 | 0.13 | 0.02 | 0.29 | 0.29 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.626 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.614 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 605               | 343    | 216    | 5             | 122    | 126    | 209          | 986    | 525    | 74           | 411    | 32     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 605               | 343    | 216    | 5             | 122    | 126    | 209          | 986    | 525    | 74           | 411    | 32     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 151               | 86     | 54     | 1             | 31     | 32     | 52           | 247    | 131    | 19           | 103    | 8      |
| Total Analysis Volume [veh/h]           | 605               | 343    | 216    | 5             | 122    | 126    | 209          | 986    | 525    | 74           | 411    | 32     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.18  | 0.20 | 0.11 | 0.00 | 0.07 | 0.07 | 0.12 | 0.29 | 0.00 | 0.02 | 0.09 | 0.09 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.614 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.491 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 28               | 2      | 14     | 2                | 0      | 6      | 6            | 1407   | 23     | 6            | 705    | 3      |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 28               | 2      | 14     | 2                | 0      | 6      | 6            | 1407   | 23     | 6            | 705    | 3      |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 7                | 1      | 4      | 1                | 0      | 2      | 2            | 352    | 6      | 2            | 176    | 1      |
| Total Analysis Volume [veh/h]           | 28               | 2      | 14     | 2                | 0      | 6      | 6            | 1407   | 23     | 6            | 705    | 3      |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.42 | 0.42 | 0.00 | 0.14 | 0.14 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.491 |      |      |      |      |      |      |      |      |      |      |      |

```

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
*****
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.681
Loss Time (sec):      5           Average Delay (sec/veh):          xxxxxx
Optimal Cycle:        35          Level Of Service:          B
*****
Street Name:          Valencia Ave          Lambert Rd/Carbon Canyon Rd
Approach:              North Bound          South Bound          East Bound          West Bound
Movement:              L - T - R          L - T - R          L - T - R          L - T - R
-----|-----|-----|-----|
Control:               Protected          Protected          Protected          Protected
Rights:                Ignore           Include           Include           Include
Min. Green:            0 0 0           0 0 0           0 0 0           0 0 0
Y+R:                  4.0 4.0 4.0     4.0 4.0 4.0     4.0 4.0 4.0     4.0 4.0 4.0
Lanes:                1 0 2 0 1       1 0 1 1 0       1 0 2 1 0       2 0 2 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:              369 162 861     27 124 38       33 951 532     180 361 9
Growth Adj:            1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:           369 162 861     27 124 38       33 951 532     180 361 9
Added Vol:              0 0 0           0 0 0           0 0 0           0 0 0
PasserByVol:           0 0 0           0 0 0           0 0 0           0 0 0
Initial Fut:           369 162 861     27 124 38       33 951 532     180 361 9
User Adj:              1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:            369 162 0        27 124 38       33 951 532     180 361 9
Reduct Vol:            0 0 0           0 0 0           0 0 0           0 0 0
Reduced Vol:           369 162 0        27 124 38       33 951 532     180 361 9
PCE Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:               1.00 1.00 0.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:           369 162 0        27 124 38       33 951 532     180 361 9
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:              1700 1700 1700  1700 1700 1700  1700 1700 1700  1700 1700 1700
Adjustment:            1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:                 1.00 2.00 1.00  1.00 1.53 0.47  1.00 2.00 1.00  2.00 2.93 0.07
Final Sat.:            1700 3400 1700  1700 2602 798  1700 3400 1700  3400 4976 124
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:               0.22 0.05 0.00  0.02 0.05 0.05  0.02 0.28 0.31  0.05 0.07 0.07
Crit Moves:           ****              ****              ****              ****
*****

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**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.606 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ↶             |        |        | ↵↶                 |        |        | ↵↶                 |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name                                    | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Base Volume Input [veh/h]               | 12            | 0      | 2      | 0             | 0      | 23     | 2                  | 1859   | 2      | 1                  | 431    | 13     |
| Base Volume Adjustment Factor           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                    | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]             | 12            | 0      | 2      | 0             | 0      | 23     | 2                  | 1859   | 2      | 1                  | 431    | 13     |
| Peak Hour Factor                        | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3             | 0      | 1      | 0             | 0      | 6      | 1                  | 465    | 1      | 0                  | 108    | 3      |
| Total Analysis Volume [veh/h]           | 12            | 0      | 2      | 0             | 0      | 23     | 2                  | 1859   | 2      | 1                  | 431    | 13     |
| Pedestrian Volume [ped/h]               | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]             | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.55 | 0.55 | 0.00 | 0.13 | 0.01 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.606 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.844 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ☞☞☞                     |        |        | ☞☞☞                     |        |        | ☞☞☞          |        |        | ☞☞☞          |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 157                     | 478    | 171    | 393                     | 435    | 363    | 320          | 878    | 182    | 162          | 1130   | 749    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 157                     | 478    | 171    | 393                     | 435    | 363    | 320          | 878    | 182    | 162          | 1130   | 749    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 39                      | 120    | 43     | 98                      | 109    | 91     | 80           | 220    | 46     | 41           | 283    | 187    |
| Total Analysis Volume [veh/h]           | 157                     | 478    | 171    | 393                     | 435    | 363    | 320          | 878    | 182    | 162          | 1130   | 749    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.14 | 0.10 | 0.12 | 0.13 | 0.21 | 0.09 | 0.26 | 0.11 | 0.05 | 0.33 | 0.44 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.844 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.729 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇌⇌⇌               |        |        | ⇌                 |        |        | ⇌⇌           |        |        | ⇌⇌⇌          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 559               | 37     | 386    | 11                | 23     | 11     | 17           | 1013   | 349    | 321          | 1456   | 19     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 559               | 37     | 386    | 11                | 23     | 11     | 17           | 1013   | 349    | 321          | 1456   | 19     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 140               | 9      | 97     | 3                 | 6      | 3      | 4            | 253    | 87     | 80           | 364    | 5      |
| Total Analysis Volume [veh/h]           | 559               | 37     | 386    | 11                | 23     | 11     | 17           | 1013   | 349    | 321          | 1456   | 19     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.16  | 0.02 | 0.13 | 0.01 | 0.02 | 0.02 | 0.01 | 0.40 | 0.40 | 0.09 | 0.43 | 0.43 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.729 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.754 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇌⇌                |        |        | ⇌⇌                |        |        | ⇌⇌           |        |        | ⇌⇌           |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 15                | 2      | 12     | 119               | 3      | 335    | 321          | 1039   | 14     | 6            | 1485   | 156    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 15                | 2      | 12     | 119               | 3      | 335    | 321          | 1039   | 14     | 6            | 1485   | 156    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 4                 | 1      | 3      | 30                | 1      | 84     | 80           | 260    | 4      | 2            | 371    | 39     |
| Total Analysis Volume [veh/h]           | 15                | 2      | 12     | 119               | 3      | 335    | 321          | 1039   | 14     | 6            | 1485   | 156    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.07 | 0.00 | 0.01 | 0.19 | 0.31 | 0.31 | 0.00 | 0.44 | 0.09 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.754 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.734 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 674               | 815    | 141    | 234               | 411    | 124    | 244          | 819    | 333    | 88           | 807    | 245    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 674               | 815    | 141    | 234               | 411    | 124    | 244          | 819    | 333    | 88           | 807    | 245    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 169               | 204    | 35     | 59                | 103    | 31     | 61           | 205    | 83     | 22           | 202    | 61     |
| Total Analysis Volume [veh/h]           | 674               | 815    | 141    | 234               | 411    | 124    | 244          | 819    | 333    | 88           | 807    | 245    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.20  | 0.19 | 0.19 | 0.07 | 0.10 | 0.10 | 0.14 | 0.24 | 0.20 | 0.05 | 0.24 | 0.14 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.734 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.097 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 221             | 649    | 18     | 498             | 270    | 48     | 206          | 703    | 155    | 14         | 539    | 846    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 221             | 649    | 18     | 498             | 270    | 48     | 206          | 703    | 155    | 14         | 539    | 846    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 55              | 162    | 5      | 125             | 68     | 12     | 52           | 176    | 39     | 4          | 135    | 212    |
| Total Analysis Volume [veh/h]           | 221             | 649    | 18     | 498             | 270    | 48     | 206          | 703    | 155    | 14         | 539    | 846    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.13  | 0.20 | 0.20 | 0.29 | 0.09 | 0.09 | 0.06 | 0.25 | 0.25 | 0.01 | 0.16 | 0.50 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.097 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.986 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           |            |        |            |        |                |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
| Base Volume Input [veh/h]               | 169        | 1163   | 1255       | 101    | 49             | 118    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]             | 169        | 1163   | 1255       | 101    | 49             | 118    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 42         | 291    | 314        | 25     | 12             | 30     |
| Total Analysis Volume [veh/h]           | 169        | 1163   | 1255       | 101    | 49             | 118    |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0              |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |            |            |            |            |            |            |
|-------------------------|------------|------------|------------|------------|------------|------------|
| Control Type            | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |            |            |            |            |            |            |
| Lead / Lag              | -          | -          | -          | -          | Lead       | -          |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.68 | 0.74 | 0.06 | 0.03 | 0.10 |
| Intersection LOS        | E     |      |      |      |      |      |
| Intersection V/C        | 0.986 |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.858 |

**Intersection Setup**

| Name                         | Northbound |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound     |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |            |        |        | ⇐⇐⇐            |        |        | ⇐                |        |        | ⇐                |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 0      | 1              | 0      | 1      | 0                | 0      | 1      | 0                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | No         |        |        | Yes            |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name                                    | Northbound |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 0          | 0      | 0      | 759            | 0      | 619    | 0                | 1919   | 1154   | 0                | 2744   | 467    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0          | 0      | 0      | 759            | 0      | 619    | 0                | 1919   | 1154   | 0                | 2744   | 467    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0          | 0      | 0      | 190            | 0      | 155    | 0                | 480    | 289    | 0                | 686    | 117    |
| Total Analysis Volume [veh/h]           | 0          | 0      | 0      | 759            | 0      | 619    | 0                | 1919   | 1154   | 0                | 2744   | 467    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0              |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0              |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.22 | 0.00 | 0.27 | 0.00 | 0.38 | 0.00 | 0.00 | 0.54 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.858 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.913 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 1163           | 72     | 493    | 0               | 0      | 232    | 207              | 2126   | 430    | 0                | 2800   | 46     |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 1163           | 72     | 493    | 0               | 0      | 232    | 207              | 2126   | 430    | 0                | 2800   | 46     |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 291            | 18     | 123    | 0               | 0      | 58     | 52               | 532    | 108    | 0                | 700    | 12     |
| Total Analysis Volume [veh/h]           | 1163           | 72     | 493    | 0               | 0      | 232    | 207              | 2126   | 430    | 0                | 2800   | 46     |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag              | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.23  | 0.25 | 0.25 | 0.00 | 0.00 | 0.07 | 0.12 | 0.42 | 0.00 | 0.00 | 0.42 | 0.42 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.913 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.931 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐                |        |        | ⇐⇐⇐                |        |        | ⇐⇐⇐              |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 252                | 286    | 101    | 335                | 393    | 294    | 311              | 2147   | 161    | 209              | 1983   | 213    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 252                | 286    | 101    | 335                | 393    | 294    | 311              | 2147   | 161    | 209              | 1983   | 213    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 63                 | 72     | 25     | 84                 | 98     | 74     | 78               | 537    | 40     | 52               | 496    | 53     |
| Total Analysis Volume [veh/h]           | 252                | 286    | 101    | 335                | 393    | 294    | 311              | 2147   | 161    | 209              | 1983   | 213    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.11 | 0.11 | 0.10 | 0.23 | 0.17 | 0.18 | 0.45 | 0.45 | 0.12 | 0.32 | 0.32 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.931 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.836 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐              |        |        | ⇐⇐              |        |        | ⇐⇐⇐⇐⇐            |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 295              | 54     | 307    | 29              | 26     | 16     | 22               | 2161   | 323    | 267              | 2241   | 66     |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 295              | 54     | 307    | 29              | 26     | 16     | 22               | 2161   | 323    | 267              | 2241   | 66     |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 74               | 14     | 77     | 7               | 7      | 4      | 6                | 540    | 81     | 67               | 560    | 17     |
| Total Analysis Volume [veh/h]           | 295              | 54     | 307    | 29              | 26     | 16     | 22               | 2161   | 323    | 267              | 2241   | 66     |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.10 | 0.18 | 0.02 | 0.02 | 0.02 | 0.01 | 0.42 | 0.19 | 0.16 | 0.45 | 0.45 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.836 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.863 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O R             |        |        | O T R             |        |        | T O R            |        |        | T O R            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 418               | 671    | 118    | 300               | 519    | 133    | 247              | 1596   | 251    | 211              | 1780   | 364    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 418               | 671    | 118    | 300               | 519    | 133    | 247              | 1596   | 251    | 211              | 1780   | 364    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 105               | 168    | 30     | 75                | 130    | 33     | 62               | 399    | 63     | 53               | 445    | 91     |
| Total Analysis Volume [veh/h]           | 418               | 671    | 118    | 300               | 519    | 133    | 247              | 1596   | 251    | 211              | 1780   | 364    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.12  | 0.23 | 0.23 | 0.09 | 0.15 | 0.08 | 0.07 | 0.36 | 0.36 | 0.06 | 0.42 | 0.42 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.863 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.658 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 131             | 271    | 145    | 234             | 229    | 132    | 237              | 2032   | 171    | 189              | 1478   | 144    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 131             | 271    | 145    | 234             | 229    | 132    | 237              | 2032   | 171    | 189              | 1478   | 144    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 33              | 68     | 36     | 59              | 57     | 33     | 59               | 508    | 43     | 47               | 370    | 36     |
| Total Analysis Volume [veh/h]           | 131             | 271    | 145    | 234             | 229    | 132    | 237              | 2032   | 171    | 189              | 1478   | 144    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.08 | 0.09 | 0.07 | 0.07 | 0.08 | 0.07 | 0.40 | 0.10 | 0.06 | 0.29 | 0.08 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.658 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.067 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T      |        |        | T T T      |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 306        | 561    | 143    | 1019       | 487    | 22     | 77               | 1994   | 315    | 176              | 1553   | 862    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 306        | 561    | 143    | 1019       | 487    | 22     | 77               | 1994   | 315    | 176              | 1553   | 862    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 77         | 140    | 36     | 255        | 122    | 6      | 19               | 499    | 79     | 44               | 388    | 216    |
| Total Analysis Volume [veh/h]           | 306        | 561    | 143    | 1019       | 487    | 22     | 77               | 1994   | 315    | 176              | 1553   | 862    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.17 | 0.08 | 0.30 | 0.14 | 0.01 | 0.05 | 0.45 | 0.45 | 0.05 | 0.30 | 0.51 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.067 |      |      |      |      |      |      |      |      |      |      |      |

*APPENDIX C-VI*

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**



**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.871 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⌈⌋⌈⌋                    |        |        | ⌈⌋                      |        |        | ⌈⌋⌈⌋⌈⌋       |        |        | ⌈⌋⌈⌋⌈⌋       |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 194                     | 250    | 236    | 1011                    | 692    | 9      | 16           | 1594   | 238    | 542          | 2035   | 627    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 194                     | 250    | 236    | 1011                    | 692    | 9      | 16           | 1594   | 238    | 542          | 2035   | 627    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 49                      | 63     | 59     | 253                     | 173    | 2      | 4            | 399    | 60     | 136          | 509    | 157    |
| Total Analysis Volume [veh/h]           | 194                     | 250    | 236    | 1011                    | 692    | 9      | 16           | 1594   | 238    | 542          | 2035   | 627    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.10 | 0.10 | 0.30 | 0.21 | 0.21 | 0.00 | 0.27 | 0.27 | 0.16 | 0.40 | 0.07 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.871 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.837 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                |        |        | T T T T        |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1              | 0      | 1      | 0            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 0              | 0      | 0      | 1084           | 0      | 730    | 0            | 1954   | 650    | 289          | 2287   | 0      |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0              | 0      | 0      | 1084           | 0      | 730    | 0            | 1954   | 650    | 289          | 2287   | 0      |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0              | 0      | 0      | 271            | 0      | 183    | 0            | 489    | 163    | 72           | 572    | 0      |
| Total Analysis Volume [veh/h]           | 0              | 0      | 0      | 1084           | 0      | 730    | 0            | 1954   | 650    | 289          | 2287   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.32 | 0.00 | 0.21 | 0.00 | 0.38 | 0.19 | 0.09 | 0.45 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.837 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.885 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇌⇌⇌            |        |        |                |        |        | ⇌⇌⇌          |        |        | ⇌⇌⇌          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 1104           | 0      | 534    | 0              | 0      | 0      | 0            | 2605   | 424    | 0            | 1472   | 573    |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 1104           | 0      | 534    | 0              | 0      | 0      | 0            | 2605   | 424    | 0            | 1472   | 573    |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]          | 276            | 0      | 134    | 0              | 0      | 0      | 0            | 651    | 106    | 0            | 368    | 0      |
| Total Analysis Volume [veh/h]           | 1104           | 0      | 534    | 0              | 0      | 0      | 0            | 2605   | 424    | 0            | 1472   | 0      |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Unsigna |
|-------------------------|-------|---------|-------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 3     | 0       | 0     | 0       | 0       | 0       | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |         |       |         |         |         |          |         |         |         |         |         |
| Lead / Lag              | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.32  | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0.00 | 0.51 | 0.25 | 0.00 | 0.29 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.885 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.714 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | + + +        |        |        | + + +        |        |        | + + +        |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2612   | 42     | 18           | 2039   | 192    |
| Base Volume Adjustment Factor           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2612   | 42     | 18           | 2039   | 192    |
| Peak Hour Factor                        | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 2            | 2      | 2      | 17           | 0      | 34     | 146          | 653    | 11     | 5            | 510    | 48     |
| Total Analysis Volume [veh/h]           | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2612   | 42     | 18           | 2039   | 192    |
| Pedestrian Volume [ped/h]               | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.01 | 0.01 | 0.04 | 0.04 | 0.04 | 0.17 | 0.52 | 0.52 | 0.01 | 0.44 | 0.44 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.714 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.828 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 169               | 322    | 11     | 125         | 218    | 405    | 500          | 2080   | 173    | 23           | 1594   | 183    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 169               | 322    | 11     | 125         | 218    | 405    | 500          | 2080   | 173    | 23           | 1594   | 183    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 42                | 81     | 3      | 31          | 55     | 101    | 125          | 520    | 43     | 6            | 399    | 46     |
| Total Analysis Volume [veh/h]           | 169               | 322    | 11     | 125         | 218    | 405    | 500          | 2080   | 173    | 23           | 1594   | 183    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.10 | 0.10 | 0.07 | 0.18 | 0.18 | 0.15 | 0.41 | 0.10 | 0.01 | 0.35 | 0.35 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.828 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.732 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 329               | 130    | 57     | 22            | 236    | 373    | 111          | 823    | 1243   | 330          | 986    | 14     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 329               | 130    | 57     | 22            | 236    | 373    | 111          | 823    | 1243   | 330          | 986    | 14     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 82                | 33     | 14     | 6             | 59     | 93     | 28           | 206    | 311    | 83           | 247    | 4      |
| Total Analysis Volume [veh/h]           | 329               | 130    | 57     | 22            | 236    | 373    | 111          | 823    | 1243   | 330          | 986    | 14     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.08 | 0.00 | 0.01 | 0.14 | 0.22 | 0.07 | 0.24 | 0.27 | 0.10 | 0.20 | 0.20 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.732 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.372 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 48               | 6      | 19     | 5                | 0      | 6      | 7            | 896    | 51     | 26           | 1313   | 2      |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 48               | 6      | 19     | 5                | 0      | 6      | 7            | 896    | 51     | 26           | 1313   | 2      |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 12               | 2      | 5      | 1                | 0      | 2      | 2            | 224    | 13     | 7            | 328    | 1      |
| Total Analysis Volume [veh/h]           | 48               | 6      | 19     | 5                | 0      | 6      | 7            | 896    | 51     | 26           | 1313   | 2      |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.28 | 0.28 | 0.02 | 0.26 | 0.26 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.372 |      |      |      |      |      |      |      |      |      |      |      |

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 1.077
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 180 Level Of Service: F
\*\*\*\*\*

Street Name: Valencia Ave Lambert Rd/Carbon Canyon Rd
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected
Rights: Ignore Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 0 2 0 1 1 0 1 1 0 2 0 2 1 0

Volume Module:
Base Vol: 370 208 188 8 422 48 56 256 607 1069 912 2
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 370 208 188 8 422 48 56 256 607 1069 912 2
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 370 208 188 8 422 48 56 256 607 1069 912 2
User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 370 208 0 8 422 48 56 256 607 1069 912 2
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 370 208 0 8 422 48 56 256 607 1069 912 2
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 370 208 0 8 422 48 56 256 607 1069 912 2

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 2.00 1.00 1.00 1.80 0.20 1.00 2.00 1.00 2.00 2.99 0.01
Final Sat.: 1700 3400 1700 1700 3053 347 1700 3400 1700 3400 5089 11

Capacity Analysis Module:
Vol/Sat: 0.22 0.06 0.00 0.00 0.14 0.14 0.03 0.08 0.36 0.31 0.18 0.18
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*
\*\*\*\*\*

**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.655 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ↶             |        |        | ↵↶                 |        |        | ↵↶                 |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name                                    | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Base Volume Input [veh/h]               | 5             | 1      | 1      | 0             | 0      | 29     | 22                 | 437    | 8      | 7                  | 1998   | 6      |
| Base Volume Adjustment Factor           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                           | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                    | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]             | 5             | 1      | 1      | 0             | 0      | 29     | 22                 | 437    | 8      | 7                  | 1998   | 6      |
| Peak Hour Factor                        | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1             | 0      | 0      | 0             | 0      | 7      | 6                  | 109    | 2      | 2                  | 500    | 2      |
| Total Analysis Volume [veh/h]           | 5             | 1      | 1      | 0             | 0      | 29     | 22                 | 437    | 8      | 7                  | 1998   | 6      |
| Pedestrian Volume [ped/h]               | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]             | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.01 | 0.13 | 0.13 | 0.00 | 0.59 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.655 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.599 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ☞☞☞                     |        |        | ☞☞☞                     |        |        | ☞☞☞          |        |        | ☞☞☞          |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 88                      | 177    | 118    | 776                     | 976    | 254    | 125          | 582    | 68     | 105          | 664    | 338    |
| Base Volume Adjustment Factor           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 88                      | 177    | 118    | 776                     | 976    | 254    | 125          | 582    | 68     | 105          | 664    | 338    |
| Peak Hour Factor                        | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 22                      | 44     | 30     | 194                     | 244    | 64     | 31           | 146    | 17     | 26           | 166    | 85     |
| Total Analysis Volume [veh/h]           | 88                      | 177    | 118    | 776                     | 976    | 254    | 125          | 582    | 68     | 105          | 664    | 338    |
| Pedestrian Volume [ped/h]               | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.05 | 0.07 | 0.23 | 0.29 | 0.15 | 0.04 | 0.17 | 0.04 | 0.03 | 0.20 | 0.20 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.599 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.736 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 286               | 7      | 364    | 63                | 34     | 11     | 5            | 1105   | 374    | 405          | 899    | 11     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 286               | 7      | 364    | 63                | 34     | 11     | 5            | 1105   | 374    | 405          | 899    | 11     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 72                | 2      | 91     | 16                | 9      | 3      | 1            | 276    | 94     | 101          | 225    | 3      |
| Total Analysis Volume [veh/h]           | 286               | 7      | 364    | 63                | 34     | 11     | 5            | 1105   | 374    | 405          | 899    | 11     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.00 | 0.10 | 0.04 | 0.03 | 0.03 | 0.00 | 0.44 | 0.44 | 0.12 | 0.27 | 0.27 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.736 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.639 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 3                 | 3      | 6      | 187               | 2      | 524    | 371          | 1023   | 19     | 9            | 873    | 99     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 3                 | 3      | 6      | 187               | 2      | 524    | 371          | 1023   | 19     | 9            | 873    | 99     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1                 | 1      | 2      | 47                | 1      | 131    | 93           | 256    | 5      | 2            | 218    | 25     |
| Total Analysis Volume [veh/h]           | 3                 | 3      | 6      | 187               | 2      | 524    | 371          | 1023   | 19     | 9            | 873    | 99     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.11 | 0.00 | 0.09 | 0.22 | 0.31 | 0.31 | 0.01 | 0.26 | 0.06 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.639 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.645 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 155               | 260    | 106    | 507               | 1200   | 224    | 56           | 684    | 388    | 72           | 522    | 247    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 155               | 260    | 106    | 507               | 1200   | 224    | 56           | 684    | 388    | 72           | 522    | 247    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 39                | 65     | 27     | 127               | 300    | 56     | 14           | 171    | 97     | 18           | 131    | 62     |
| Total Analysis Volume [veh/h]           | 155               | 260    | 106    | 507               | 1200   | 224    | 56           | 684    | 388    | 72           | 522    | 247    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.07 | 0.07 | 0.15 | 0.28 | 0.28 | 0.03 | 0.20 | 0.23 | 0.04 | 0.15 | 0.15 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.645 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.943 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 156             | 271    | 27     | 920             | 991    | 314    | 82           | 540    | 150    | 45         | 434    | 408    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 156             | 271    | 27     | 920             | 991    | 314    | 82           | 540    | 150    | 45         | 434    | 408    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 39              | 68     | 7      | 230             | 248    | 79     | 21           | 135    | 38     | 11         | 109    | 102    |
| Total Analysis Volume [veh/h]           | 156             | 271    | 27     | 920             | 991    | 314    | 82           | 540    | 150    | 45         | 434    | 408    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.09 | 0.09 | 0.54 | 0.38 | 0.38 | 0.02 | 0.20 | 0.20 | 0.03 | 0.13 | 0.24 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.943 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.144 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↻         |        |        | ↵↻         |        |        | +              |        |        | ↵↻             |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 14         | 207    | 4      | 2          | 376    | 17     | 15             | 0      | 52     | 9              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.25 | 0.25 | 0.00 | 0.88 | 0.04 | 0.04 | 0.00 | 0.16 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.144 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.734 |

**Intersection Setup**

| Name                         | Northbound |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound     |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |            |        |        | T T T          |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 0      | 1              | 0      | 1      | 0                | 0      | 1      | 0                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | No         |        |        | Yes            |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name                                    | Northbound |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 0          | 0      | 0      | 684            | 0      | 572    | 0                | 1742   | 830    | 0                | 2232   | 232    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 0          | 0      | 0      | 684            | 0      | 572    | 0                | 1742   | 830    | 0                | 2232   | 232    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 0          | 0      | 0      | 171            | 0      | 143    | 0                | 436    | 208    | 0                | 558    | 58     |
| Total Analysis Volume [veh/h]           | 0          | 0      | 0      | 684            | 0      | 572    | 0                | 1742   | 830    | 0                | 2232   | 232    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0              |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0              |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|-------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.20 | 0.00 | 0.25 | 0.00 | 0.34 | 0.00 | 0.00 | 0.44 | 0.00 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.734 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.711 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name                                    | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 1153           | 43     | 949    | 0               | 0      | 51     | 118              | 1555   | 636    | 0                | 1756   | 18     |
| Base Volume Adjustment Factor           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 1153           | 43     | 949    | 0               | 0      | 51     | 118              | 1555   | 636    | 0                | 1756   | 18     |
| Peak Hour Factor                        | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 288            | 11     | 237    | 0               | 0      | 13     | 30               | 389    | 159    | 0                | 439    | 5      |
| Total Analysis Volume [veh/h]           | 1153           | 43     | 949    | 0               | 0      | 51     | 118              | 1555   | 636    | 0                | 1756   | 18     |
| Pedestrian Volume [ped/h]               | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag              | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.23  | 0.32 | 0.32 | 0.00 | 0.00 | 0.02 | 0.07 | 0.30 | 0.00 | 0.00 | 0.26 | 0.26 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.711 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.840 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐                |        |        | ⇐⇐⇐                |        |        | ⇐⇐⇐              |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 172                | 241    | 94     | 190                | 382    | 186    | 238              | 2195   | 117    | 104              | 1821   | 112    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 172                | 241    | 94     | 190                | 382    | 186    | 238              | 2195   | 117    | 104              | 1821   | 112    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 43                 | 60     | 24     | 48                 | 96     | 47     | 60               | 549    | 29     | 26               | 455    | 28     |
| Total Analysis Volume [veh/h]           | 172                | 241    | 94     | 190                | 382    | 186    | 238              | 2195   | 117    | 104              | 1821   | 112    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.10 | 0.10 | 0.06 | 0.22 | 0.11 | 0.14 | 0.45 | 0.45 | 0.06 | 0.28 | 0.28 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.840 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.721 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐              |        |        | ⇐⇐              |        |        | ⇐⇐⇐⇐⇐            |        |        | ⇐⇐⇐              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2170   | 488    | 201              | 1757   | 37     |
| Base Volume Adjustment Factor           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2170   | 488    | 201              | 1757   | 37     |
| Peak Hour Factor                        | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 51               | 4      | 42     | 7               | 8      | 4      | 4                | 543    | 122    | 50               | 439    | 9      |
| Total Analysis Volume [veh/h]           | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2170   | 488    | 201              | 1757   | 37     |
| Pedestrian Volume [ped/h]               | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.06 | 0.10 | 0.02 | 0.03 | 0.03 | 0.01 | 0.43 | 0.29 | 0.12 | 0.35 | 0.35 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.721 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.707 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O R             |        |        | O L R             |        |        | T O R            |        |        | T O R            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 202               | 283    | 99     | 413               | 757    | 149    | 155              | 1513   | 276    | 81               | 1274   | 101    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 202               | 283    | 99     | 413               | 757    | 149    | 155              | 1513   | 276    | 81               | 1274   | 101    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 51                | 71     | 25     | 103               | 189    | 37     | 39               | 378    | 69     | 20               | 319    | 25     |
| Total Analysis Volume [veh/h]           | 202               | 283    | 99     | 413               | 757    | 149    | 155              | 1513   | 276    | 81               | 1274   | 101    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.06  | 0.11 | 0.11 | 0.12 | 0.22 | 0.09 | 0.05 | 0.35 | 0.35 | 0.02 | 0.27 | 0.27 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.707 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.644 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 151             | 216    | 135    | 318             | 338    | 233    | 212              | 1148   | 99     | 133              | 1785   | 169    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 151             | 216    | 135    | 318             | 338    | 233    | 212              | 1148   | 99     | 133              | 1785   | 169    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 38              | 54     | 34     | 80              | 85     | 58     | 53               | 287    | 25     | 33               | 446    | 42     |
| Total Analysis Volume [veh/h]           | 151             | 216    | 135    | 318             | 338    | 233    | 212              | 1148   | 99     | 133              | 1785   | 169    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.06 | 0.08 | 0.09 | 0.10 | 0.14 | 0.06 | 0.23 | 0.06 | 0.04 | 0.35 | 0.10 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.644 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.845 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | RLR        |        |        | RLR        |        |        | LRL              |        |        | RLR              |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 280        | 250    | 160    | 968        | 615    | 38     | 46               | 1403   | 277    | 294              | 1644   | 619    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 280        | 250    | 160    | 968        | 615    | 38     | 46               | 1403   | 277    | 294              | 1644   | 619    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 70         | 63     | 40     | 242        | 154    | 10     | 12               | 351    | 69     | 74               | 411    | 155    |
| Total Analysis Volume [veh/h]           | 280        | 250    | 160    | 968        | 615    | 38     | 46               | 1403   | 277    | 294              | 1644   | 619    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.07 | 0.09 | 0.28 | 0.18 | 0.02 | 0.03 | 0.33 | 0.33 | 0.09 | 0.32 | 0.36 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.845 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.869 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T        |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name                                    | St Co                     |      |      | St Co |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|---------------------------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 368  | 688  | 353   | 637  | 461  | 17           | 44   | 169  | 302          | 457  | 136  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 368                       | 688  | 353  | 637   | 461  | 17   | 44           | 169  | 302  | 457          | 136  | 801  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 92                        | 172  | 88   | 159   | 115  | 4    | 11           | 424  | 76   | 114          | 340  | 200  |
| Total Analysis Volume [veh/h]           | 368                       | 688  | 353  | 637   | 461  | 17   | 44           | 169  | 302  | 457          | 136  | 801  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Ove |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 6   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     | 6,7 |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.11  | 0.20 | 0.20 | 0.19 | 0.14 | 0.14 | 0.01 | 0.29 | 0.29 | 0.13 | 0.27 | 0.28 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.869 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.690 |

**Intersection Setup**

| Name                         | SR-57      |      |       | SR-57      |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Approach   |      |       |            |      |       | Approach     |      |       |              |      |       |
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |            |      |       | R R R      |      |       |              |      |       | R            |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 0     | 1          | 0    | 1     | 0            | 0    | 1     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | No           |      |       | No           |      |       |

**Volumes**

| Name                                    | SR-57    |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|----------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   | Approach |      |      |       |      |      | Approach     |      |      |              |      |      |
| Base Volume Input [veh/h]               | 0        | 0    | 0    | 547   | 0    | 897  | 0            | 151  | 877  | 270          | 183  | 0    |
| Base Volume Adjustment Factor           | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00     | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 0        | 0    | 0    | 547   | 0    | 897  | 0            | 151  | 877  | 270          | 183  | 0    |
| Peak Hour Factor                        | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00     | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 0        | 0    | 0    | 137   | 0    | 224  | 0            | 379  | 219  | 68           | 460  | 0    |
| Total Analysis Volume [veh/h]           | 0        | 0    | 0    | 547   | 0    | 897  | 0            | 151  | 877  | 270          | 183  | 0    |
| Pedestrian Volume [ped/h]               | 0        |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0        |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Split | Per | Split | Per | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-------|-----|-------|-----|-----|-----|------|-----|-----|
| Signal Group            | 0   | 0   | 0   | 7     | 0   | 0     | 0   | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |       |     |       |     |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | Lea   | -   | -     | -   | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.16 | 0.00 | 0.26 | 0.00 | 0.30 | 0.26 | 0.08 | 0.36 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.690 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.601 |

**Intersection Setup**

| Name                         | SR-57      |      |       | SR-57      |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
| Approach                     | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           | ⇐⇐⇐        |      |       |            |      |       | ⇐⇐⇐          |      |       | ⇐⇐⇐          |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 0          | 0    | 0     | 1            | 0    | 1     | 0            | 0    | 1     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | No         |      |       | No           |      |       | No           |      |       |

**Volumes**

| Name                                    | SR-57 |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]               | 710   | 0    | 330  | 0     | 0    | 0    | 0            | 172  | 605  | 0            | 121  | 573  |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 710   | 0    | 330  | 0     | 0    | 0    | 0            | 172  | 605  | 0            | 121  | 573  |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 0.00 |
| Total 15-Minute Volume [veh/h]          | 178   | 0    | 83   | 0     | 0    | 0    | 0            | 431  | 151  | 0            | 304  | 0    |
| Total Analysis Volume [veh/h]           | 710   | 0    | 330  | 0     | 0    | 0    | 0            | 172  | 605  | 0            | 121  | 0    |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |



Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Per | Split | Per | Per | Per | Prot | Per | Per | Per | Per | Unsi |
|-------------------------|-------|-----|-------|-----|-----|-----|------|-----|-----|-----|-----|------|
| Signal Group            | 3     | 0   | 0     | 0   | 0   | 0   | 5    | 2   | 0   | 0   | 6   | 0    |
| Auxiliary Signal Groups |       |     |       |     |     |     |      |     |     |     |     |      |
| Lead / Lag              | Lea   | -   | -     | -   | -   | -   | Lea  | -   | -   | -   | -   | -    |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.21  | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.34 | 0.34 | 0.00 | 0.24 | 0.00 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.601 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.677 |

**Intersection Setup**

| Name                         | Pointe Drive |      |       | Pointe Drive |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|--------------|------|-------|--------------|------|-------|--------------|------|-------|--------------|------|-------|
| Approach                     | Northbound   |      |       | Southbound   |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           | +            |      |       | + + +        |      |       | + + +        |      |       | + + +        |      |       |
| Turning Movement             | Left         | Thru | Right | Left         | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0            | 0    | 0     | 0            | 0    | 1     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.         | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0            | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00        |      |       | 30.00        |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00         |      |       | 0.00         |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes          |      |       | Yes          |      |       | No           |      |       | Yes          |      |       |

**Volumes**

| Name                                    | Pointe Drive |      |      | Pointe Drive |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]               | 130          | 0    | 32   | 126          | 0    | 469  | 214          | 223  | 44   | 17           | 174  | 63   |
| Base Volume Adjustment Factor           | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 130          | 0    | 32   | 126          | 0    | 469  | 214          | 223  | 44   | 17           | 174  | 63   |
| Peak Hour Factor                        | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 33           | 0    | 8    | 32           | 0    | 117  | 54           | 560  | 11   | 4            | 437  | 16   |
| Total Analysis Volume [veh/h]           | 130          | 0    | 32   | 126          | 0    | 469  | 214          | 223  | 44   | 17           | 174  | 63   |
| Pedestrian Volume [ped/h]               | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 0   | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.00 | 0.10 | 0.07 | 0.00 | 0.14 | 0.06 | 0.45 | 0.45 | 0.01 | 0.35 | 0.35 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.677 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.655 |

**Intersection Setup**

| Name                         | N As       |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound  |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T        |      |      | T T         |      |      | T T T T      |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left        | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0        | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1           | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.        | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00        | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00       |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00        |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes         |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | N As                      |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|---------------------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 154  | 62   | 24          | 92   | 118  | 151          | 49   | 214  | 227          | 27   | 154  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00        | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 154                       | 62   | 24   | 92          | 118  | 151  | 49           | 214  | 227  | 27           | 154  | 48   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 39                        | 16   | 6    | 23          | 30   | 38   | 12           | 535  | 57   | 7            | 387  | 12   |
| Total Analysis Volume [veh/h]           | 154                       | 62   | 24   | 92          | 118  | 151  | 49           | 214  | 227  | 27           | 154  | 48   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0           |      |      | 0            |      |      | 0            |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.03 | 0.03 | 0.05 | 0.08 | 0.08 | 0.01 | 0.42 | 0.13 | 0.02 | 0.31 | 0.31 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.655 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.669 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound    |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | ⏏⏏⏏        |      |      | ⏏             |      |      | ⏏⏏⏏          |      |      | ⏏⏏⏏          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left          | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0          | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1             | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.          | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00          | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00         |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00          |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes           |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | Kr Bo |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|-------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]               | 610   | 343  | 270  | 6             | 122  | 126  | 209          | 112  | 531  | 112          | 501  | 33   |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 610   | 343  | 270  | 6             | 122  | 126  | 209          | 112  | 531  | 112          | 501  | 33   |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 153   | 86   | 68   | 2             | 31   | 32   | 52           | 282  | 133  | 28           | 125  | 8    |
| Total Analysis Volume [veh/h]           | 610   | 343  | 270  | 6             | 122  | 126  | 209          | 112  | 531  | 112          | 501  | 33   |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Ove | Prot | Per | Per | Prot | Per | Ove | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 8   | 7    | 4   | 0   | 5    | 2   | 2   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     | 1,8 |      |     |     |      |     | 2,3 |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.18  | 0.20 | 0.13 | 0.00 | 0.07 | 0.07 | 0.12 | 0.33 | 0.00 | 0.03 | 0.10 | 0.10 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.669 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.549 |

**Intersection Setup**

| Name                         | Sunflower Street |      |       | Sunflower Street |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------------|------|-------|------------------|------|-------|--------------|------|-------|--------------|------|-------|
| Approach                     | Northbound       |      |       | Southbound       |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |                  |      |       |                  |      |       |              |      |       |              |      |       |
| Turning Movement             | Left             | Thru | Right | Left             | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0             | 12.0 | 12.0  | 12.0             | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1                | 0    | 0     | 0                | 0    | 1     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.             | 100. | 100.  | 100.             | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0                | 0    | 0     | 0                | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00             | 0.00 | 0.00  | 0.00             | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00            |      |       | 30.00            |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00             |      |       | 0.00             |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes              |      |       | Yes              |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name                                    | Sunflower Street |      |      | Sunflower Street |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|------------------|------|------|------------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]               | 28               | 2    | 15   | 2                | 0    | 6    | 6            | 160  | 23   | 6            | 835  | 3    |
| Base Volume Adjustment Factor           | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00             | 2.00 | 2.00 | 2.00             | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 28               | 2    | 15   | 2                | 0    | 6    | 6            | 160  | 23   | 6            | 835  | 3    |
| Peak Hour Factor                        | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 7                | 1    | 4    | 1                | 0    | 2    | 2            | 401  | 6    | 2            | 209  | 1    |
| Total Analysis Volume [veh/h]           | 28               | 2    | 15   | 2                | 0    | 6    | 6            | 160  | 23   | 6            | 835  | 3    |
| Pedestrian Volume [ped/h]               | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |



Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 7   | 0   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | Lea | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.48 | 0.48 | 0.00 | 0.16 | 0.16 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.549 |      |      |      |      |      |      |      |      |      |      |      |

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.756
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: C
\*\*\*\*\*

Street Name: Valencia Ave Lambert Rd/Carbon Canyon Rd
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Protected Protected Protected Protected
Rights: Ignore Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 0 2 0 1 1 0 1 1 0 2 0 2 1 0

Volume Module:
Base Vol: 422 162 873 27 124 38 33 957 598 198 369 9
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 422 162 873 27 124 38 33 957 598 198 369 9
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 422 162 873 27 124 38 33 957 598 198 369 9
User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 422 162 0 27 124 38 33 957 598 198 369 9
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 422 162 0 27 124 38 33 957 598 198 369 9
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 422 162 0 27 124 38 33 957 598 198 369 9





Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 2.00 1.00 1.00 1.53 0.47 1.00 2.00 1.00 2.00 2.93 0.07
Final Sat.: 1700 3400 1700 1700 2602 798 1700 3400 1700 3400 4979 121

Capacity Analysis Module:
Vol/Sat: 0.25 0.05 0.00 0.02 0.05 0.05 0.02 0.28 0.35 0.06 0.07 0.07
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*
\*\*\*\*\*

**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.611 |

**Intersection Setup**

| Name                         | Santa Fe Road  |      |       | Santa Fe Road   |      |       | Ca Ca   |      |       | Ca Ca   |      |       |
|------------------------------|--|------|-------|---|------|-------|---|------|-------|---|------|-------|
| Approach                     | Northbound   |      |       | Southbound  |      |       | Eastbound   |      |       | Westbound   |      |       |
| Lane Configuration           |  |      |       |  |      |       |  |      |       |  |      |       |
| Turning Movement             | Left   | Thru | Right | Left  | Thru | Right | Left  | Thru | Right | Left  | Thru | Right |
| Lane Width [ft]              | 12.0   | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0  | 0    | 0     | 0   | 0    | 0     | 1   | 0    | 0     | 1   | 0    | 1     |
| Entry Pocket Length [ft]     | 100.   | 100. | 100.  | 100.  | 100. | 100.  | 100.  | 100. | 100.  | 100.  | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0  | 0    | 0     | 0   | 0    | 0     | 0   | 0    | 0     | 0   | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00   | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  |
| Speed [mph]                  | 30.00  |      |       | 30.00   |      |       | 30.00   |      |       | 30.00   |      |       |
| Grade [%]                    | 0.00   |      |       | 0.00  |      |       | 0.00  |      |       | 0.00  |      |       |
| Crosswalk                    | Yes  |      |       | Yes   |      |       | No  |      |       | Yes   |      |       |

**Volumes**

| Name                                    | Santa Fe Road |      |      | Santa Fe Road |      |      | Ca Ca |      |      | Ca Ca |      |      |
|---|---------------|------|------|---------------|------|------|-------|------|------|-------|------|------|
| Base Volume Input [veh/h]               | 12            | 0    | 2    | 0             | 0    | 23   | 2     | 187  | 2    | 1     | 457  | 13   |
| Base Volume Adjustment Factor           | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00          | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 12            | 0    | 2    | 0             | 0    | 23   | 2     | 187  | 2    | 1     | 457  | 13   |
| Peak Hour Factor                        | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 3             | 0    | 1    | 0             | 0    | 6    | 1     | 469  | 1    | 0     | 114  | 3    |
| Total Analysis Volume [veh/h]           | 12            | 0    | 2    | 0             | 0    | 23   | 2     | 187  | 2    | 1     | 457  | 13   |
| Pedestrian Volume [ped/h]               | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 0   | 0   | 4   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.55 | 0.55 | 0.00 | 0.13 | 0.01 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.611 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.844 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     |            |      |      |            |      |      |              |      |      |              |      |      |
| Lane Configuration           | ☞☞☞        |      |      | ☞☞☞        |      |      | ☞☞☞          |      |      | ☞☞☞          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | St Co |      |      | St Co |      |      | Birch Street |      |      | Birch Street |      |      |
|---|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]               | 157   | 478  | 185  | 393   | 435  | 363  | 320          | 893  | 182  | 172          | 114  | 749  |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 157   | 478  | 185  | 393   | 435  | 363  | 320          | 893  | 182  | 172          | 114  | 749  |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 39    | 120  | 46   | 98    | 109  | 91   | 80           | 223  | 46   | 43           | 285  | 187  |
| Total Analysis Volume [veh/h]           | 157   | 478  | 185  | 393   | 435  | 363  | 320          | 893  | 182  | 172          | 114  | 749  |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.14 | 0.11 | 0.12 | 0.13 | 0.21 | 0.09 | 0.26 | 0.11 | 0.05 | 0.34 | 0.44 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.844 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.741 |

**Intersection Setup**

| Name                         | S As       |      |       | S As       |      |       | Birch Street |      |       | Birch Street |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Approach                     |            |      |       |            |      |       |              |      |       |              |      |       |
| Lane Configuration           | ⇐⇐⇐        |      |       | ⇐          |      |       | ⇐⇐           |      |       | ⇐⇐⇐          |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 1          | 0    | 0     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name                                    | S As                      |      |      | S As |      |      | Birch Street |      |      | Birch Street |      |      |
|---|---------------------------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 559  | 37   | 403  | 11   | 23   | 11           | 17   | 104  | 349          | 332  | 147  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 559                       | 37   | 403  | 11   | 23   | 11   | 17           | 104  | 349  | 332          | 147  | 19   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 140                       | 9    | 101  | 3    | 6    | 3    | 4            | 261  | 87   | 83           | 369  | 5    |
| Total Analysis Volume [veh/h]           | 559                       | 37   | 403  | 11   | 23   | 11   | 17           | 104  | 349  | 332          | 147  | 19   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Ove | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 8   | 7   | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     | 1,8 |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.16  | 0.02 | 0.14 | 0.01 | 0.02 | 0.02 | 0.01 | 0.41 | 0.41 | 0.10 | 0.44 | 0.44 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.741 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.763 |

**Intersection Setup**

| Name                         | N As       |      |      | N As       |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram]    |      |      | [Diagram]    |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram]    |      |      | [Diagram]    |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name                                    | N As                      |      |      | N As |      |      | Birch Street |      |      | Birch Street |      |      |
|---|---------------------------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 15   | 2    | 12   | 119  | 3    | 335          | 321  | 108  | 14           | 6    | 151  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 15                        | 2    | 12   | 119  | 3    | 335  | 321          | 108  | 14   | 6            | 151  | 156  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 4                         | 1    | 3    | 30   | 1    | 84   | 80           | 272  | 4    | 2            | 379  | 39   |
| Total Analysis Volume [veh/h]           | 15                        | 2    | 12   | 119  | 3    | 335  | 321          | 108  | 14   | 6            | 151  | 156  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Ove | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-------|-------|-------|-------|-------|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5 |      |     |     |      |     |     |
| Lead / Lag              | -     | -     | -     | -     | -     | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.07 | 0.00 | 0.01 | 0.19 | 0.32 | 0.32 | 0.00 | 0.45 | 0.09 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.763 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.756 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T          |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name                                    | Kr Bo |      |      | Kr Bo |      |      | Birch Street |      |      | Birch Street |      |      |
|---|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|   |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]               | 674   | 855  | 148  | 240   | 439  | 134  | 258          | 851  | 333  | 91           | 827  | 250  |
| Base Volume Adjustment Factor           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 674   | 855  | 148  | 240   | 439  | 134  | 258          | 851  | 333  | 91           | 827  | 250  |
| Peak Hour Factor                        | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 169   | 214  | 37   | 60    | 110  | 34   | 65           | 213  | 83   | 23           | 207  | 63   |
| Total Analysis Volume [veh/h]           | 674   | 855  | 148  | 240   | 439  | 134  | 258          | 851  | 333  | 91           | 827  | 250  |
| Pedestrian Volume [ped/h]               | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.20  | 0.20 | 0.20 | 0.07 | 0.11 | 0.11 | 0.15 | 0.25 | 0.20 | 0.05 | 0.24 | 0.15 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.756 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.212 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Birch Street |      |      | Rose Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Lane Configuration           | ↵          |      |      | ↵          |      |      | ↵↵↵          |      |      | ↵↵         |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1          | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00       |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes        |      |      |

**Volumes**

| Name                                    | Va Av                     |      |      | Va Av |      |      | Birch Street |      |      | Rose Drive |      |      |
|---|---------------------------|------|------|-------|------|------|--------------|------|------|------------|------|------|
|   | Base Volume Input [veh/h] | 240  | 710  | 53    | 562  | 308  | 64           | 229  | 735  | 165        | 34   | 565  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]             | 240                       | 710  | 53   | 562   | 308  | 64   | 229          | 735  | 165  | 34         | 565  | 917  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 60                        | 178  | 13   | 141   | 77   | 16   | 57           | 184  | 41   | 9          | 141  | 229  |
| Total Analysis Volume [veh/h]           | 240                       | 710  | 53   | 562   | 308  | 64   | 229          | 735  | 165  | 34         | 565  | 917  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0            |      |      | 0          |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.14  | 0.22 | 0.22 | 0.33 | 0.11 | 0.11 | 0.07 | 0.26 | 0.26 | 0.02 | 0.17 | 0.54 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.212 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.043 |

**Intersection Setup**

| Name                         | Rose Drive |      |       | Rose Drive |      |       | Vesuvius Drive |      |       | Vesuvius Drive |      |       |
|------------------------------|------------|------|-------|------------|------|-------|----------------|------|-------|----------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound      |      |       | Westbound      |      |       |
| Lane Configuration           |            |      |       |            |      |       |                |      |       |                |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left           | Thru | Right | Left           | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 1     | 1          | 0    | 1     | 0              | 0    | 0     | 1              | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.           | 100. | 100.  | 100.           | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0              | 0    | 0     | 0              | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00          |      |       | 30.00          |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00           |      |       | 0.00           |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes            |      |       | Yes            |      |       |

**Volumes**

| Name                                    | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|---|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Base Volume Input [veh/h]               | 169        | 127  | 33   | 13         | 132  | 101  | 49             | 0    | 118  | 26             | 0    | 10   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]             | 169        | 127  | 33   | 13         | 132  | 101  | 49             | 0    | 118  | 26             | 0    | 10   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 42         | 318  | 8    | 3          | 332  | 25   | 12             | 0    | 30   | 7              | 0    | 3    |
| Total Analysis Volume [veh/h]           | 169        | 127  | 33   | 13         | 132  | 101  | 49             | 0    | 118  | 26             | 0    | 10   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Signal Group            | 0   | 6   | 0   | 0   | 2   | 0   | 0   | 8   | 0   | 0   | 4   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |     |     |     |     |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.38 | 0.38 | 0.01 | 0.78 | 0.06 | 0.03 | 0.00 | 0.10 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.043 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.861 |

**Intersection Setup**

| Name                         |          |      |       | SR-57      |      |       | Im Hi      |      |       | Im Hi     |      |       |           |  |
|------------------------------|----------|------|-------|------------|------|-------|------------|------|-------|-----------|------|-------|-----------|--|
|                              | Approach |      |       | Northbound |      |       | Southbound |      |       | Eastbound |      |       | Westbound |  |
| Lane Configuration           |          |      |       |            |      |       |            |      |       |           |      |       |           |  |
| Turning Movement             | Left     | Thru | Right | Left       | Thru | Right | Left       | Thru | Right | Left      | Thru | Right |           |  |
| Lane Width [ft]              | 12.0     | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |           |  |
| No. of Lanes in Entry Pocket | 0        | 0    | 0     | 1          | 0    | 1     | 0          | 0    | 1     | 0         | 0    | 1     |           |  |
| Entry Pocket Length [ft]     | 100.     | 100. | 100.  | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.      | 100. | 100.  |           |  |
| No. of Lanes in Exit Pocket  | 0        | 0    | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0         | 0    | 0     |           |  |
| Exit Pocket Length [ft]      | 0.00     | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |           |  |
| Speed [mph]                  | 30.00    |      |       | 30.00      |      |       | 30.00      |      |       | 30.00     |      |       |           |  |
| Grade [%]                    | 0.00     |      |       | 0.00       |      |       | 0.00       |      |       | 0.00      |      |       |           |  |
| Crosswalk                    | No       |      |       | Yes        |      |       | No         |      |       | No        |      |       |           |  |

**Volumes**

| Name                                    |                           |      |      | SR-57 |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 0    | 0    | 0     | 764  | 0    | 619   | 0    | 193  | 115   | 0    | 275  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 0                         | 0    | 0    | 764   | 0    | 619  | 0     | 193  | 115  | 0     | 275  | 476  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 0                         | 0    | 0    | 191   | 0    | 155  | 0     | 483  | 289  | 0     | 688  | 119  |
| Total Analysis Volume [veh/h]           | 0                         | 0    | 0    | 764   | 0    | 619  | 0     | 193  | 115  | 0     | 275  | 476  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Split | Per | Split | Per | Per | Unsi | Per | Per | Unsi |
|-------------------------|-----|-----|-----|-------|-----|-------|-----|-----|------|-----|-----|------|
| Signal Group            | 0   | 0   | 0   | 7     | 0   | 0     | 0   | 2   | 0    | 0   | 6   | 0    |
| Auxiliary Signal Groups |     |     |     |       |     |       |     |     |      |     |     |      |
| Lead / Lag              | -   | -   | -   | Lea   | -   | -     | -   | -   | -    | -   | -   | -    |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.22 | 0.00 | 0.27 | 0.00 | 0.38 | 0.00 | 0.00 | 0.54 | 0.00 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.861 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.918 |

**Intersection Setup**

| Name                         | SR-57      |      |       | Sh Ce |      |       | Im Hi      |      |       | Im Hi |      |       |
|------------------------------|------------|------|-------|-------|------|-------|------------|------|-------|-------|------|-------|
|                              | Northbound |      |       |       |      |       | Southbound |      |       |       |      |       |
| Approach                     | Northbound |      |       |       |      |       | Southbound |      |       |       |      |       |
| Lane Configuration           | TTT        |      |       | TT    |      |       | TTT        |      |       | TTT   |      |       |
| Turning Movement             | Left       | Thru | Right | Left  | Thru | Right | Left       | Thru | Right | Left  | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 0     | 0    | 1     | 1          | 0    | 1     | 0     | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.  | 100. | 100.  | 100.       | 100. | 100.  | 100.  | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0     | 0    | 0     | 0          | 0    | 0     | 0     | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00 |      |       | 30.00      |      |       | 30.00 |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00  |      |       | 0.00       |      |       | 0.00  |      |       |
| Crosswalk                    | Yes        |      |       | Yes   |      |       | No         |      |       | No    |      |       |

**Volumes**

| Name                                    | SR-57                     |      |      | Sh Ce |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|-------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 116  | 72   | 506   | 0    | 0    | 232   | 207  | 214  | 430   | 0    | 282  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 116                       | 72   | 506  | 0     | 0    | 232  | 207   | 214  | 430  | 0     | 282  | 46   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 291                       | 18   | 127  | 0     | 0    | 58   | 52    | 536  | 108  | 0     | 705  | 12   |
| Total Analysis Volume [veh/h]           | 116                       | 72   | 506  | 0     | 0    | 232  | 207   | 214  | 430  | 0     | 282  | 46   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Per | Split | Prot | Per | Unsi | Per | Per | Per |
|-------------------------|-------|-------|-------|-------|-----|-------|------|-----|------|-----|-----|-----|
| Signal Group            | 0     | 8     | 0     | 0     | 0   | 4     | 5    | 2   | 0    | 0   | 6   | 0   |
| Auxiliary Signal Groups |       |       |       |       |     |       |      |     |      |     |     |     |
| Lead / Lag              | -     | -     | -     | -     | -   | -     | Lea  | -   | -    | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.23  | 0.26 | 0.26 | 0.00 | 0.00 | 0.07 | 0.12 | 0.42 | 0.00 | 0.00 | 0.42 | 0.42 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.918 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.943 |

**Intersection Setup**

| Name                         | As Ro      |      |      | As Ro      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |            |      |      |            |      |      |           |      |      |           |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T     |      |      | T T T     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | As Ro      |      |      | As Ro      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|---|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Base Volume Input [veh/h]               | 252        | 299  | 102  | 335        | 402  | 294  | 311       | 217  | 161  | 210       | 200  | 213  |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Total Hourly Volume [veh/h]             | 252        | 299  | 102  | 335        | 402  | 294  | 311       | 217  | 161  | 210       | 200  | 213  |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 63         | 75   | 26   | 84         | 101  | 74   | 78        | 545  | 40   | 53        | 501  | 53   |
| Total Analysis Volume [veh/h]           | 252        | 299  | 102  | 335        | 402  | 294  | 311       | 217  | 161  | 210       | 200  | 213  |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.12 | 0.12 | 0.10 | 0.24 | 0.17 | 0.18 | 0.46 | 0.46 | 0.12 | 0.33 | 0.33 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.943 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.845 |

**Intersection Setup**

| Name                         | PI Av      |      |       | Castlegate Lane |      |       | Im Hi     |      |       | Im Hi     |      |       |
|------------------------------|------------|------|-------|-----------------|------|-------|-----------|------|-------|-----------|------|-------|
|                              | Approach   |      |       |                 |      |       |           |      |       |           |      |       |
|                              | Northbound |      |       | Southbound      |      |       | Eastbound |      |       | Westbound |      |       |
| Lane Configuration           |            |      |       |                 |      |       |           |      |       |           |      |       |
| Turning Movement             | Left       | Thru | Right | Left            | Thru | Right | Left      | Thru | Right | Left      | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0            | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 1               | 0    | 0     | 1         | 0    | 1     | 1         | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.            | 100. | 100.  | 100.      | 100. | 100.  | 100.      | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0               | 0    | 0     | 0         | 0    | 0     | 0         | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00            | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00           |      |       | 30.00     |      |       | 30.00     |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00            |      |       | 0.00      |      |       | 0.00      |      |       |
| Crosswalk                    | Yes        |      |       | Yes             |      |       | No        |      |       | Yes       |      |       |

**Volumes**

| Name                                    | PI Av    |      |      | Castlegate Lane |      |      | Im Hi |      |      | Im Hi |      |      |
|---|----------|------|------|-----------------|------|------|-------|------|------|-------|------|------|
|   | Approach |      |      |                 |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]               | 295      | 54   | 310  | 29              | 26   | 16   | 22    | 219  | 323  | 268   | 226  | 66   |
| Base Volume Adjustment Factor           | 1.00     | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00     | 2.00 | 2.00 | 2.00            | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00     | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0        | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0        | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0        | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0        | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0        | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0        | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 295      | 54   | 310  | 29              | 26   | 16   | 22    | 219  | 323  | 268   | 226  | 66   |
| Peak Hour Factor                        | 1.00     | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00     | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 74       | 14   | 78   | 7               | 7    | 4    | 6     | 549  | 81   | 67    | 566  | 17   |
| Total Analysis Volume [veh/h]           | 295      | 54   | 310  | 29              | 26   | 16   | 22    | 219  | 323  | 268   | 226  | 66   |
| Pedestrian Volume [ped/h]               | 0        |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0        |      |      | 0               |      |      | 0     |      |      | 0     |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-------|-------|-------|-------|-------|-------|------|-----|-----|------|-----|-----|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 0     | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |       |       |       |       |       |       |      |     |     |      |     |     |
| Lead / Lag              | -     | -     | -     | -     | -     | -     | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.10 | 0.18 | 0.02 | 0.02 | 0.02 | 0.01 | 0.43 | 0.19 | 0.16 | 0.46 | 0.46 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.845 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.881 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |            |      |      |            |      |      |           |      |      |           |      |      |
| Lane Configuration           | T O R      |      |      | T O R      |      |      | T O R     |      |      | T O R     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Kr Bo      |      |      | Kr Bo      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|---|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Base Volume Input [veh/h]               | 418        | 712  | 118  | 300        | 547  | 134  | 248       | 163  | 251  | 211       | 180  | 364  |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Total Hourly Volume [veh/h]             | 418        | 712  | 118  | 300        | 547  | 134  | 248       | 163  | 251  | 211       | 180  | 364  |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 105        | 178  | 30   | 75         | 137  | 34   | 62        | 410  | 63   | 53        | 452  | 91   |
| Total Analysis Volume [veh/h]           | 418        | 712  | 118  | 300        | 547  | 134  | 248       | 163  | 251  | 211       | 180  | 364  |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.12  | 0.24 | 0.24 | 0.09 | 0.16 | 0.08 | 0.07 | 0.37 | 0.37 | 0.06 | 0.43 | 0.43 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.881 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.672 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |            |      |      |            |      |      |           |      |      |           |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram] |      |      | [Diagram] |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 1    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Va Av      |      |      | Va Av      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|---|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Base Volume Input [veh/h]               | 131        | 318  | 145  | 245        | 256  | 159  | 282       | 204  | 171  | 189       | 148  | 161  |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 | 2.00      | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Total Hourly Volume [veh/h]             | 131        | 318  | 145  | 245        | 256  | 159  | 282       | 204  | 171  | 189       | 148  | 161  |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00      | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 33         | 80   | 36   | 61         | 64   | 40   | 71        | 511  | 43   | 47        | 372  | 40   |
| Total Analysis Volume [veh/h]           | 131        | 318  | 145  | 245        | 256  | 159  | 282       | 204  | 171  | 189       | 148  | 161  |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0         |      |      | 0         |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.04  | 0.09 | 0.09 | 0.07 | 0.08 | 0.09 | 0.08 | 0.40 | 0.10 | 0.06 | 0.29 | 0.09 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.672 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.130 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | KOLR       |      |      | KOLR       |      |      | KOLR      |      |      | KOLR      |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name                                    | Rose Drive                |      |      | Rose Drive |      |      | Im Hi |      |      | Im Hi |      |      |
|---|---------------------------|------|------|------------|------|------|-------|------|------|-------|------|------|
|   | Base Volume Input [veh/h] | 306  | 657  | 143        | 104  | 549  | 33    | 91   | 200  | 315   | 176  | 157  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]             | 306                       | 657  | 143  | 104        | 549  | 33   | 91    | 200  | 315  | 176   | 157  | 896  |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 77                        | 164  | 36   | 260        | 137  | 8    | 23    | 501  | 79   | 44    | 393  | 224  |
| Total Analysis Volume [veh/h]           | 306                       | 657  | 143  | 104        | 549  | 33   | 91    | 200  | 315  | 176   | 157  | 896  |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0          |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 3    | 8   | 0   | 7    | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |      |     |     |      |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.19 | 0.08 | 0.31 | 0.16 | 0.02 | 0.05 | 0.45 | 0.45 | 0.05 | 0.31 | 0.53 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.130 |      |      |      |      |      |      |      |      |      |      |      |

*APPENDIX C-VII*

**YEAR 2045 PLUS PROJECT WITH MITIGATION  
TRAFFIC CONDITIONS**

Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.860
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 68 Level Of Service: D
\*\*\*\*\*

Street Name: Valencia Ave Lambert Rd/Carbon Canyon Rd
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Split Phase Split Phase Protected Protected
Rights: Ignore Include Ovl Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 1 1 0 1 1 0 1 1 0 1 2 0 2 1 0

Volume Module:
Base Vol: 335 208 175 8 422 48 56 256 607 1069 912 2
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 335 208 175 8 422 48 56 256 607 1069 912 2
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 335 208 175 8 422 48 56 256 607 1069 912 2
User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 335 208 0 8 422 48 56 256 607 1069 912 2
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 335 208 0 8 422 48 56 256 607 1069 912 2
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 335 208 0 8 422 48 56 256 607 1069 912 2
OvlAdjVol: 426

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.85 1.15 1.00 1.00 1.80 0.20 1.00 3.00 1.00 2.00 2.99 0.01
Final Sat.: 3146 1954 1700 1700 3053 347 1700 5100 1700 3400 5089 11

Capacity Analysis Module:
Vol/Sat: 0.11 0.11 0.00 0.00 0.14 0.14 0.03 0.05 0.36 0.31 0.18 0.18
OvlAdjV/S: 0.25
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*
\*\*\*\*\*



**Intersection Level Of Service Report**  
**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.755 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 156             | 271    | 27     | 920             | 991    | 314    | 82           | 540    | 150    | 45         | 434    | 408    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 156             | 271    | 27     | 920             | 991    | 314    | 82           | 540    | 150    | 45         | 434    | 408    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 39              | 68     | 7      | 230             | 248    | 79     | 21           | 135    | 38     | 11         | 109    | 102    |
| Total Analysis Volume [veh/h]           | 156             | 271    | 27     | 920             | 991    | 314    | 82           | 540    | 150    | 45         | 434    | 408    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.09 | 0.09 | 0.27 | 0.38 | 0.38 | 0.02 | 0.20 | 0.20 | 0.03 | 0.13 | 0.00 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.755 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.722 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↵↵        |        |        | ↵↵↵        |        |        | ⊕              |        |        | ↵↵             |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 14         | 207    | 4      | 2          | 376    | 17     | 15             | 0      | 52     | 9              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.25 | 0.25 | 0.00 | 0.46 | 0.46 | 0.04 | 0.00 | 0.16 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.722 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.782 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 172                | 241    | 94     | 190                | 382    | 186    | 238              | 2195   | 117    | 104              | 1821   | 112    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 172                | 241    | 94     | 190                | 382    | 186    | 238              | 2195   | 117    | 104              | 1821   | 112    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 43                 | 60     | 24     | 48                 | 96     | 47     | 60               | 549    | 29     | 26               | 455    | 28     |
| Total Analysis Volume [veh/h]           | 172                | 241    | 94     | 190                | 382    | 186    | 238              | 2195   | 117    | 104              | 1821   | 112    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.10 | 0.10 | 0.06 | 0.17 | 0.17 | 0.14 | 0.45 | 0.45 | 0.06 | 0.28 | 0.28 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.782 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.793 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 280        | 250    | 160    | 968        | 615    | 38     | 46               | 1403   | 277    | 294              | 1644   | 619    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 280        | 250    | 160    | 968        | 615    | 38     | 46               | 1403   | 277    | 294              | 1644   | 619    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 70         | 63     | 40     | 242        | 154    | 10     | 12               | 351    | 69     | 74               | 411    | 155    |
| Total Analysis Volume [veh/h]           | 280        | 250    | 160    | 968        | 615    | 38     | 46               | 1403   | 277    | 294              | 1644   | 619    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         | 4,6     |
| Lead / Lag              | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.08  | 0.07 | 0.09 | 0.19 | 0.23 | 0.02 | 0.03 | 0.33 | 0.33 | 0.09 | 0.32 | 0.17 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.793 |      |      |      |      |      |      |      |      |      |      |      |



Level Of Service Computation Report

ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

\*\*\*\*\*
Intersection #8 Valencia Ave at Lambert Road/Carbon Canyon Road
\*\*\*\*\*

Cycle (sec): 100 Critical Vol./Cap.(X): 0.480
Loss Time (sec): 5 Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A
\*\*\*\*\*

Street Name: Valencia Ave Lambert Rd/Carbon Canyon Rd
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Split Phase Split Phase Protected Protected
Rights: Ignore Include Ovl Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Y+R: 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0
Lanes: 1 1 1 0 1 1 0 1 1 0 1 2 0 2 1 0

Volume Module:
Base Vol: 399 162 873 27 124 38 33 957 558 183 369 9
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 399 162 873 27 124 38 33 957 558 183 369 9
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 399 162 873 27 124 38 33 957 558 183 369 9
User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 399 162 0 27 124 38 33 957 558 183 369 9
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 399 162 0 27 124 38 33 957 558 183 369 9
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 399 162 0 27 124 38 33 957 558 183 369 9
OvlAdjVol: 359

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 2.00 1.00 1.00 1.00 1.53 0.47 1.00 3.00 1.00 2.00 2.93 0.07
Final Sat.: 3400 1700 1700 1700 2602 798 1700 5100 1700 3400 4979 121

Capacity Analysis Module:
Vol/Sat: 0.12 0.10 0.00 0.02 0.05 0.05 0.02 0.19 0.33 0.05 0.07 0.07
OvlAdjV/S: 0.21
Crit Moves: \*\*\*\* \*\*\*\* \*\*\*\* \*\*\*\*

\*\*\*\*\*

**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.881 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 240             | 710    | 53     | 562             | 308    | 64     | 229          | 735    | 165    | 34         | 565    | 917    |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 240             | 710    | 53     | 562             | 308    | 64     | 229          | 735    | 165    | 34         | 565    | 917    |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 60              | 178    | 13     | 141             | 77     | 16     | 57           | 184    | 41     | 9          | 141    | 229    |
| Total Analysis Volume [veh/h]           | 240             | 710    | 53     | 562             | 308    | 64     | 229          | 735    | 165    | 34         | 565    | 917    |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.14  | 0.22 | 0.22 | 0.17 | 0.11 | 0.11 | 0.07 | 0.26 | 0.26 | 0.02 | 0.17 | 0.37 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.881 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.683 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↵↵        |        |        | ↵↵↵        |        |        | ⊕              |        |        | ↵↵             |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 42         | 318    | 8      | 3          | 332    | 25     | 12             | 0      | 30     | 7              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.38 | 0.38 | 0.01 | 0.42 | 0.42 | 0.03 | 0.00 | 0.10 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.683 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.911 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 252                | 299    | 102    | 335                | 402    | 294    | 311              | 2179   | 161    | 210              | 2004   | 213    |
| Base Volume Adjustment Factor           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 252                | 299    | 102    | 335                | 402    | 294    | 311              | 2179   | 161    | 210              | 2004   | 213    |
| Peak Hour Factor                        | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 63                 | 75     | 26     | 84                 | 101    | 74     | 78               | 545    | 40     | 53               | 501    | 53     |
| Total Analysis Volume [veh/h]           | 252                | 299    | 102    | 335                | 402    | 294    | 311              | 2179   | 161    | 210              | 2004   | 213    |
| Pedestrian Volume [ped/h]               | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.07  | 0.12 | 0.12 | 0.10 | 0.20 | 0.20 | 0.18 | 0.46 | 0.46 | 0.12 | 0.33 | 0.33 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.911 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.013 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]               | 306        | 657    | 143    | 1040       | 549    | 33     | 91               | 2005   | 315    | 176              | 1570   | 896    |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]             | 306        | 657    | 143    | 1040       | 549    | 33     | 91               | 2005   | 315    | 176              | 1570   | 896    |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 77         | 164    | 36     | 260        | 137    | 8      | 23               | 501    | 79     | 44               | 393    | 224    |
| Total Analysis Volume [veh/h]           | 306        | 657    | 143    | 1040       | 549    | 33     | 91               | 2005   | 315    | 176              | 1570   | 896    |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |



Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|-------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups |       |       |       |       |       |       |          |         |         |          |         | 4,6     |
| Lead / Lag              | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.09  | 0.19 | 0.08 | 0.20 | 0.23 | 0.02 | 0.05 | 0.45 | 0.45 | 0.05 | 0.31 | 0.32 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.013 |      |      |      |      |      |      |      |      |      |      |      |

## APPENDIX D

### INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS – HCM

*APPENDIX D-1*

**EXISTING TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**

**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 33.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.724 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 147                     | 187    | 129    | 840                     | 564    | 8      | 13           | 1185   | 191    | 417          | 1476   | 519    |
| Base Volume Input [veh/h]                   | 147                     | 187    | 129    | 840                     | 564    | 8      | 13           | 1185   | 191    | 417          | 1476   | 519    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 147                     | 187    | 129    | 840                     | 564    | 8      | 13           | 1185   | 191    | 417          | 1476   | 519    |
| Peak Hour Factor                            | 0.9130                  | 0.9130 | 0.9130 | 0.9700                  | 0.9700 | 0.9700 | 0.9540       | 0.9540 | 0.9540 | 0.9540       | 0.9540 | 0.9540 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 40                      | 51     | 35     | 216                     | 145    | 2      | 3            | 311    | 50     | 109          | 387    | 136    |
| Total Analysis Volume [veh/h]               | 161                     | 205    | 141    | 866                     | 581    | 8      | 14           | 1242   | 200    | 437          | 1547   | 544    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 12       | 10      | 0       | 46       | 44      | 0       | 10       | 39      | 0       | 25       | 54      | 54      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 0       | 0       | 0        | 33      | 0       | 0        | 28      | 0       | 0        | 22      | 22      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C     | C     | L     | C     | C     | L     | C     | R    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 |
| g_i, Effective Green Time [s]           | 7     | 10    | 10    | 10    | 34    | 37    | 37    | 2     | 43    | 43    | 17    | 58    | 96   |
| g / C, Green / Cycle                    | 0.06  | 0.08  | 0.08  | 0.08  | 0.28  | 0.31  | 0.31  | 0.02  | 0.36  | 0.36  | 0.14  | 0.48  | 0.80 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05  | 0.06  | 0.06  | 0.06  | 0.25  | 0.16  | 0.15  | 0.00  | 0.19  | 0.19  | 0.12  | 0.27  | 0.29 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 5700  | 1900  | 3500  | 5700  | 1900 |
| c, Capacity [veh/h]                     | 219   | 158   | 158   | 158   | 997   | 580   | 580   | 69    | 2023  | 674   | 504   | 2733  | 1515 |
| d1, Uniform Delay [s]                   | 55.31 | 53.94 | 53.80 | 53.50 | 40.81 | 34.30 | 34.28 | 57.93 | 30.82 | 30.88 | 50.25 | 22.33 | 3.45 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               | 4.78  | 7.77  | 6.74  | 5.06  | 2.48  | 0.69  | 0.69  | 1.45  | 1.01  | 3.07  | 4.64  | 0.86  | 0.66 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |        |        |        |       |        |        |        |        |        |
|---------------------------------------|-------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.74  | 0.77  | 0.74  | 0.68  | 0.87   | 0.51   | 0.51   | 0.20  | 0.53   | 0.54   | 0.87   | 0.57   | 0.36   |
| d, Delay for Lane Group [s/veh]       | 60.09 | 61.71 | 60.54 | 58.56 | 43.29  | 34.99  | 34.96  | 59.38 | 31.83  | 33.95  | 54.89  | 23.19  | 4.11   |
| Lane Group LOS                        | E     | E     | E     | E     | D      | C      | C      | E     | C      | C      | D      | C      | A      |
| Critical Lane Group                   | No    | Yes   | No    | No    | Yes    | No     | No     | No    | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.54  | 3.94  | 3.75  | 3.37  | 12.41  | 7.19   | 7.16   | 0.22  | 8.44   | 8.93   | 6.73   | 10.44  | 3.21   |
| 50th-Percentile Queue Length [ft/ln]  | 63.51 | 98.57 | 93.81 | 84.18 | 310.18 | 179.87 | 179.10 | 5.58  | 211.11 | 223.13 | 168.29 | 261.02 | 80.25  |
| 95th-Percentile Queue Length [veh/ln] | 4.57  | 7.10  | 6.75  | 6.06  | 18.18  | 11.59  | 11.55  | 0.40  | 13.21  | 13.82  | 10.99  | 15.74  | 5.78   |
| 95th-Percentile Queue Length [ft/ln]  | 114.3 | 177.4 | 168.8 | 151.5 | 454.60 | 289.85 | 288.83 | 10.05 | 330.25 | 345.62 | 274.67 | 393.51 | 144.45 |

**Movement, Approach, & Intersection Results**

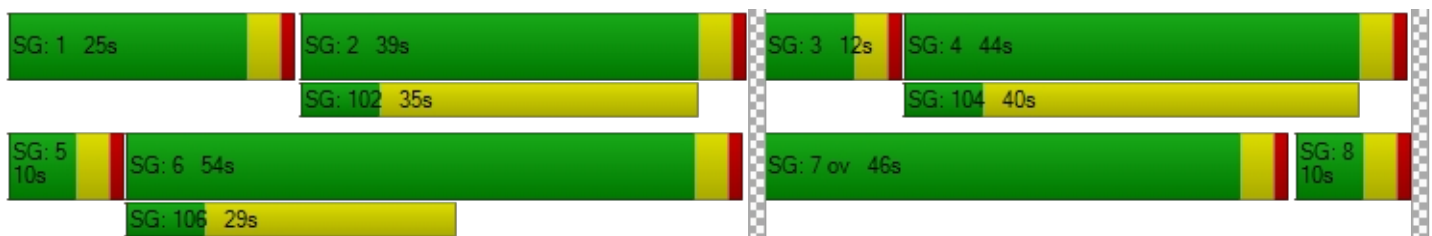
|                                 |       |       |       |       |       |       |       |       |       |       |       |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 60.09 | 61.24 | 58.95 | 43.29 | 34.98 | 34.96 | 59.38 | 32.11 | 33.95 | 54.89 | 23.19 | 4.11 |
| Movement LOS                    | E     | E     | E     | D     | C     | C     | E     | C     | C     | D     | C     | A    |
| d_A, Approach Delay [s/veh]     | 60.26 |       |       | 39.92 |       |       | 32.62 |       |       | 24.56 |       |      |
| Approach LOS                    | E     |       |       | D     |       |       | C     |       |       | C     |       |      |
| d_I, Intersection Delay [s/veh] | 33.34 |       |       |       |       |       |       |       |       |       |       |      |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |      |
| Intersection V/C                | 0.724 |       |       |       |       |       |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.848 | 2.827 | 3.207 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 100   | 666   | 583   | 833   |
| d_b, Bicycle Delay [s]                                   | 54.17 | 26.68 | 30.12 | 20.43 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.978 | 2.760 | 2.160 | 2.950 |
| Bicycle LOS  | A     | C     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.807 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐            |        |        | ⇐            |        |        | ⇐            |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1              | 0      | 1      | 0            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 |                |        |        | No             |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name  | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 0              | 0      | 0      | 997            | 0      | 498    | 0            | 1611   | 549    | 211          | 1968   | 0      |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0              | 0      | 0      | 997            | 0      | 498    | 0            | 1611   | 549    | 211          | 1968   | 0      |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 0.8640         | 1.0000 | 0.8640 | 1.0000       | 0.9400 | 0.9400 | 0.9190       | 0.9190 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0              | 0      | 0      | 288            | 0      | 144    | 0            | 428    | 146    | 57           | 535    | 0      |
| Total Analysis Volume [veh/h]               | 0              | 0      | 0      | 1154           | 0      | 576    | 0            | 1714   | 584    | 230          | 2141   | 0      |
| Presence of On-Street Parking               |                |        |        | No             |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 60    | 0       | 0     | 0       | 23      | 0       | 12       | 35      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 12      | 0       | 0        | 14      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | C     | C     | R     | L     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 36    | 36    | 36    | 39    | 39    | 39    | 8     | 51    |
| g / C, Green / Cycle                    | 0.38  | 0.38  | 0.38  | 0.41  | 0.41  | 0.41  | 0.08  | 0.53  |
| (v / s)_i Volume / Saturation Flow Rate | 0.33  | 0.33  | 0.30  | 0.30  | 0.30  | 0.30  | 0.07  | 0.38  |
| s, saturation flow rate [veh/h]         | 1750  | 1750  | 1900  | 3800  | 1900  | 1900  | 3500  | 5700  |
| c, Capacity [veh/h]                     | 671   | 671   | 729   | 1540  | 770   | 770   | 298   | 3034  |
| d1, Uniform Delay [s]                   | 26.94 | 26.94 | 25.91 | 24.10 | 24.10 | 24.10 | 42.57 | 16.65 |
| k, delay calibration                    | 0.14  | 0.14  | 0.11  | 0.50  | 0.50  | 0.50  | 0.11  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.29  | 4.29  | 1.97  | 3.34  | 6.51  | 6.51  | 4.27  | 1.41  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.86   | 0.86   | 0.79   | 0.75   | 0.75   | 0.75   | 0.77   | 0.71   |
| d, Delay for Lane Group [s/veh]       | 31.23  | 31.23  | 27.88  | 27.44  | 30.61  | 30.61  | 46.84  | 18.06  |
| Lane Group LOS                        | C      | C      | C      | C      | C      | C      | D      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 12.32  | 12.32  | 11.47  | 11.26  | 11.94  | 11.94  | 2.80   | 11.21  |
| 50th-Percentile Queue Length [ft/ln]  | 308.12 | 308.12 | 286.63 | 281.45 | 298.38 | 298.38 | 69.88  | 280.17 |
| 95th-Percentile Queue Length [veh/ln] | 18.08  | 18.08  | 17.02  | 16.76  | 17.60  | 17.60  | 5.03   | 16.70  |
| 95th-Percentile Queue Length [ft/ln]  | 452.06 | 452.06 | 425.45 | 419.02 | 440.03 | 440.03 | 125.78 | 417.43 |

**Movement, Approach, & Intersection Results**

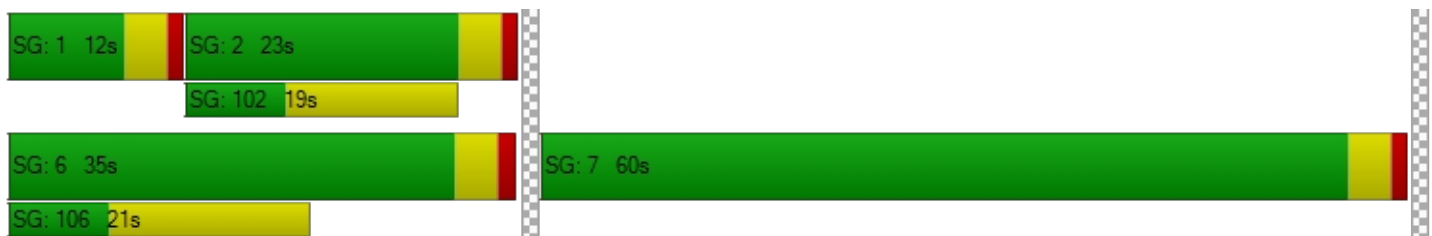
|                                 |       |      |      |       |      |       |       |       |       |       |       |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 31.23 | 0.00 | 27.88 | 0.00  | 27.78 | 30.61 | 46.84 | 18.06 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | C     | C     | D     | B     |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 30.12 |      |       | 29.03 |       |       | 20.85 |       |      |
| Approach LOS                    | A     |      |      | C     |      |       | C     |       |       | C     |       |      |
| d_I, Intersection Delay [s/veh] | 26.29 |      |      |       |      |       |       |       |       |       |       |      |
| Intersection LOS                | C     |      |      |       |      |       |       |       |       |       |       |      |
| Intersection V/C                | 0.807 |      |      |       |      |       |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.14 | 37.14 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.114 | 2.505 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1179  | 400   | 653   |
| d_b, Bicycle Delay [s]                                   | 47.51 | 8.01  | 30.41 | 21.56 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 4.414 | 2.824 | 2.864 |
| Bicycle LOS  | D     | E     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.838 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐            |        |        |                |        |        | ⇐            |        |        | ⇐            |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 0      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No             |        |        |                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 989            | 0      | 468    | 0              | 0      | 0      | 267          | 2331   | 0      | 0            | 1201   | 461    |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 989            | 0      | 468    | 0              | 0      | 0      | 267          | 2331   | 0      | 0            | 1201   | 461    |
| Peak Hour Factor                            | 0.8940         | 1.0000 | 0.8940 | 1.0000         | 1.0000 | 1.0000 | 0.9710       | 0.9710 | 1.0000 | 1.0000       | 0.8830 | 0.8830 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 277            | 0      | 131    | 0              | 0      | 0      | 69           | 600    | 0      | 0            | 340    | 131    |
| Total Analysis Volume [veh/h]               | 1106           | 0      | 523    | 0              | 0      | 0      | 275          | 2401   | 0      | 0            | 1360   | 522    |
| Presence of On-Street Parking               | No             |        | No     |                |        |        | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|-------|---------|-------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| Signal Group                 | 3     | 0       | 0     | 0       | 0       | 0       | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |         |       |         |         |         |          |         |         |         |         |         |
| Lead / Lag                   | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 6     | 0       | 0     | 0       | 0       | 0       | 6        | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 30    | 0       | 0     | 0       | 0       | 0       | 30       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 65    | 0       | 0     | 0       | 0       | 0       | 14       | 35      | 0       | 0       | 21      | 0       |
| Vehicle Extension [s]        | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 7     | 0       | 0     | 0       | 0       | 0       | 0        | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 14    | 0       | 0     | 0       | 0       | 0       | 0        | 16      | 0       | 0       | 10      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 | No    |         |       |         |         |         |          | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               | No    |         |       |         |         |         | No       | No      |         |         | No      |         |
| Maximum Recall               | No    |         |       |         |         |         | No       | No      |         |         | No      |         |
| Pedestrian Recall            | No    |         |       |         |         |         | No       | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | R     |  | L     | C     | C     | C     | R     |
|---|-------|-------|--|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100   | 100   |  | 100   | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 37    | 37    |  | 10    | 55    | 41    | 41    | 41    |
| g / C, Green / Cycle                    | 0.37  | 0.37  |  | 0.10  | 0.55  | 0.41  | 0.41  | 0.41  |
| (v / s)_i Volume / Saturation Flow Rate | 0.32  | 0.28  |  | 0.08  | 0.42  | 0.25  | 0.25  | 0.25  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 3500  | 5700  | 3800  | 1900  | 1900  |
| c, Capacity [veh/h]                     | 1302  | 707   |  | 342   | 3124  | 1560  | 780   | 780   |
| d1, Uniform Delay [s]                   | 28.84 | 27.22 |  | 44.18 | 17.64 | 23.10 | 23.10 | 23.10 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.11  | 0.50  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.65  | 1.55  |  | 4.45  | 1.88  | 1.74  | 3.44  | 3.44  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |  |        |        |        |        |        |
|---------------------------------------|--------|--------|--|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.85   | 0.74   |  | 0.80   | 0.77   | 0.60   | 0.60   | 0.60   |
| d, Delay for Lane Group [s/veh]       | 30.49  | 28.77  |  | 48.63  | 19.52  | 24.84  | 26.55  | 26.55  |
| Lane Group LOS                        | C      | C      |  | D      | B      | C      | C      | C      |
| Critical Lane Group                   | Yes    | No     |  | No     | Yes    | No     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 12.07  | 10.81  |  | 3.52   | 13.91  | 8.81   | 9.18   | 9.18   |
| 50th-Percentile Queue Length [ft/ln]  | 301.83 | 270.35 |  | 88.06  | 347.82 | 220.25 | 229.49 | 229.49 |
| 95th-Percentile Queue Length [veh/ln] | 17.77  | 16.21  |  | 6.34   | 20.03  | 13.68  | 14.15  | 14.15  |
| 95th-Percentile Queue Length [ft/ln]  | 444.29 | 405.18 |  | 158.51 | 500.75 | 341.95 | 353.71 | 353.71 |

**Movement, Approach, & Intersection Results**

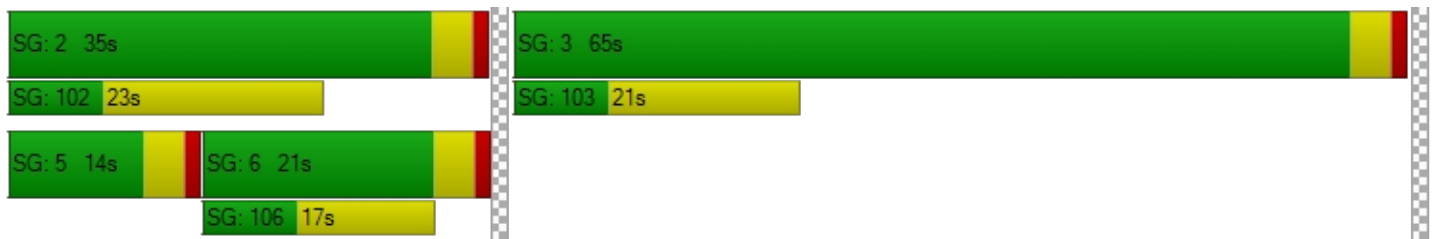
|                                 |       |      |       |      |      |      |       |       |      |       |       |       |
|---------------------------------|-------|------|-------|------|------|------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 30.49 | 0.00 | 28.77 | 0.00 | 0.00 | 0.00 | 48.63 | 19.52 | 0.00 | 0.00  | 24.97 | 26.55 |
| Movement LOS                    | C     |      | C     |      |      |      | D     | B     |      |       | C     | C     |
| d_A, Approach Delay [s/veh]     | 29.94 |      |       | 0.00 |      |      | 22.51 |       |      | 25.69 |       |       |
| Approach LOS                    | C     |      |       | A    |      |      | C     |       |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 25.43 |      |       |      |      |      |       |       |      |       |       |       |
| Intersection LOS                | C     |      |       |      |      |      |       |       |      |       |       |       |
| Intersection V/C                | 0.838 |      |       |      |      |      |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 39.61 | 39.61 | 0.00  | 39.61 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.474 | 2.108 | 0.000 | 3.268 |
| Crosswalk LOS  | B     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1220  | 0     | 620   | 340   |
| d_b, Bicycle Delay [s]                                   | 7.61  | 50.00 | 23.81 | 34.45 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.560 | 4.132 | 3.031 | 2.595 |
| Bicycle LOS  | A     | D     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 13.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.577 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | +            |        |        | +            |        |        | +            |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No           |        |        | No           |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name  | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 8            | 7      | 6      | 42           | 1      | 85     | 459          | 2114   | 35     | 15           | 1578   | 145    |
| Base Volume Input [veh/h]                   | 8            | 7      | 6      | 42           | 1      | 85     | 459          | 2114   | 35     | 15           | 1578   | 145    |
| Base Volume Adjustment Factor               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 8            | 7      | 6      | 42           | 1      | 85     | 459          | 2114   | 35     | 15           | 1578   | 145    |
| Peak Hour Factor                            | 0.7500       | 0.7500 | 0.7500 | 0.7620       | 0.7620 | 0.7620 | 0.8950       | 0.8950 | 0.8950 | 0.9060       | 0.9060 | 0.9060 |
| Other Adjustment Factor                     | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 3            | 2      | 2      | 14           | 0      | 28     | 128          | 591    | 10     | 4            | 435    | 40     |
| Total Analysis Volume [veh/h]               | 11           | 9      | 8      | 55           | 1      | 112    | 513          | 2362   | 39     | 17           | 1742   | 160    |
| Presence of On-Street Parking               | No           |        | No     | No           |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 44      | 0       | 0       | 44      | 0       | 35       | 39      | 0       | 27       | 31      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 33      | 0       | 0       | 0       | 0       | 0        | 14      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110  | 110  | 110   | 110  | 110  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6     | 6     | 6     | 19    | 90   | 90   | 2     | 73   | 73   |
| g / C, Green / Cycle                    | 0.05  | 0.05  | 0.05  | 0.17  | 0.81 | 0.81 | 0.02  | 0.66 | 0.66 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02  | 0.03  | 0.03  | 0.15  | 0.41 | 0.44 | 0.01  | 0.33 | 0.34 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 3500  | 3800 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 144   | 163   | 208   | 603   | 3092 | 1546 | 41    | 2523 | 1261 |
| d1, Uniform Delay [s]                   | 49.92 | 50.72 | 50.64 | 44.14 | 3.26 | 3.38 | 53.04 | 9.31 | 9.36 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.65  | 1.24  | 2.17  | 3.48  | 0.60 | 1.33 | 6.71  | 0.71 | 1.45 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |        |        |        |       |        |        |
|---------------------------------------|-------|-------|-------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.19  | 0.34  | 0.54  | 0.85   | 0.51   | 0.53   | 0.42  | 0.50   | 0.51   |
| d, Delay for Lane Group [s/veh]       | 50.57 | 51.96 | 52.81 | 47.62  | 3.86   | 4.71   | 59.75 | 10.02  | 10.81  |
| Lane Group LOS                        | D     | D     | D     | D      | A      | A      | E     | B      | B      |
| Critical Lane Group                   | No    | Yes   | No    | Yes    | No     | No     | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 0.77  | 1.56  | 1.56  | 7.03   | 4.01   | 4.66   | 0.54  | 7.24   | 7.60   |
| 50th-Percentile Queue Length [ft/ln]  | 19.14 | 38.98 | 39.08 | 175.63 | 100.36 | 116.55 | 13.47 | 180.89 | 190.04 |
| 95th-Percentile Queue Length [veh/ln] | 1.38  | 2.81  | 2.81  | 11.37  | 7.23   | 8.20   | 0.97  | 11.65  | 12.12  |
| 95th-Percentile Queue Length [ft/ln]  | 34.46 | 70.17 | 70.34 | 284.30 | 180.65 | 205.07 | 24.25 | 291.18 | 303.08 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 50.57 | 50.57 | 50.57 | 51.96 | 51.96 | 52.81 | 47.62 | 4.14 | 4.71 | 59.75 | 10.24 | 10.81 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | A    | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 50.57 |       |       | 52.52 |       |       | 11.81 |      |      | 10.72 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |      |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 12.97 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | B     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.577 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.55 | 44.55 | 0.00  | 44.55 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.766 | 2.475 | 0.000 | 3.287 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 727   | 727   | 636   | 491   |
| d_b, Bicycle Delay [s]                                   | 22.27 | 22.27 | 25.56 | 31.31 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.606 | 1.837 | 3.162 | 2.615 |
| Bicycle LOS  | A     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 57.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | E     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.012 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No          |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |



**Volumes**

| Name  | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |             |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 137               | 268    | 10     | 104         | 182    | 339    | 417          | 1659   | 140    | 19           | 1195   | 153    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 137               | 268    | 10     | 104         | 182    | 339    | 417          | 1659   | 140    | 19           | 1195   | 153    |
| Peak Hour Factor                            | 0.6110            | 0.6110 | 0.6110 | 0.5110      | 0.5110 | 0.5110 | 0.8790       | 0.8790 | 0.8790 | 0.8850       | 0.8850 | 0.8850 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 56                | 110    | 4      | 51          | 89     | 166    | 119          | 472    | 40     | 5            | 338    | 43     |
| Total Analysis Volume [veh/h]               | 224               | 439    | 16     | 204         | 356    | 663    | 474          | 1887   | 159    | 21           | 1350   | 173    |
| Presence of On-Street Parking               | No                |        | No     | No          |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 19       | 27      | 0       | 37       | 45      | 0       | 20       | 43      | 0       | 13       | 36      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 16      | 0       | 0        | 19      | 0       | 0        | 20      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 15    | 40    | 40    | 16    | 41    | 41    | 16    | 45    | 45    | 3     | 32    | 32    |
| g / C, Green / Cycle                    | 0.13  | 0.34  | 0.34  | 0.13  | 0.34  | 0.34  | 0.13  | 0.38  | 0.38  | 0.03  | 0.27  | 0.27  |
| (v / s)_i Volume / Saturation Flow Rate | 0.12  | 0.12  | 0.12  | 0.11  | 0.19  | 0.35  | 0.14  | 0.33  | 0.08  | 0.01  | 0.27  | 0.27  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1900  | 1900  | 3500  | 5700  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 225   | 636   | 636   | 236   | 647   | 647   | 467   | 2142  | 714   | 45    | 1017  | 508   |
| d1, Uniform Delay [s]                   | 52.47 | 30.19 | 30.15 | 51.10 | 32.10 | 39.56 | 52.00 | 34.95 | 25.52 | 57.69 | 43.94 | 43.82 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.13  | 0.48  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 26.79 | 0.34  | 0.34  | 9.19  | 0.85  | 40.96 | 23.32 | 5.63  | 0.72  | 7.15  | 28.59 | 38.04 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 1.00   | 0.36   | 0.36   | 0.87   | 0.55   | 1.02   | 1.02   | 0.88   | 0.22   | 0.46  | 1.00   | 0.99   |
| d, Delay for Lane Group [s/veh]       | 79.26  | 30.54  | 30.49  | 60.29  | 32.95  | 80.52  | 75.32  | 40.59  | 26.24  | 64.84 | 72.53  | 81.86  |
| Lane Group LOS                        | E      | C      | C      | E      | C      | F      | F      | D      | C      | E     | F      | F      |
| Critical Lane Group                   | Yes    | No     | No     | No     | No     | Yes    | Yes    | No     | No     | No    | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 8.40   | 5.07   | 5.01   | 6.60   | 8.51   | 26.09  | 8.51   | 17.99  | 3.26   | 0.72  | 19.00  | 20.17  |
| 50th-Percentile Queue Length [ft/ln]  | 209.98 | 126.87 | 125.24 | 165.07 | 212.78 | 652.32 | 212.86 | 449.63 | 81.40  | 17.98 | 474.89 | 504.27 |
| 95th-Percentile Queue Length [veh/ln] | 13.15  | 8.77   | 8.68   | 10.82  | 13.30  | 35.06  | 13.39  | 24.94  | 5.86   | 1.29  | 26.17  | 27.54  |
| 95th-Percentile Queue Length [ft/ln]  | 328.80 | 219.23 | 217.01 | 270.43 | 332.39 | 876.41 | 334.76 | 623.51 | 146.51 | 32.37 | 654.22 | 688.41 |

**Movement, Approach, & Intersection Results**

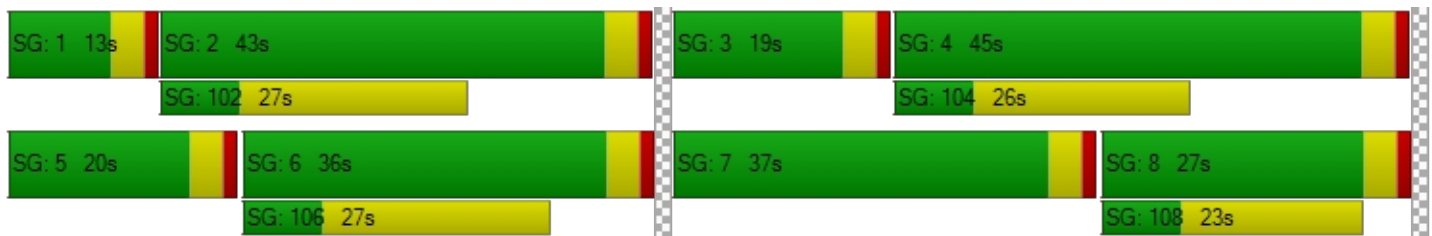
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 79.26 | 30.51 | 30.49 | 60.29 | 32.95 | 80.52 | 75.32 | 40.59 | 26.24 | 64.84 | 74.82 | 81.86 |
| Movement LOS                    | E     | C     | C     | E     | C     | F     | F     | D     | C     | E     | E     | F     |
| d_A, Approach Delay [s/veh]     | 46.59 |       |       | 63.30 |       |       | 46.21 |       |       | 75.48 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | D     |       |       | E     |       |       |
| d_I, Intersection Delay [s/veh] | 57.33 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | E     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 1.012 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.551 | 2.764 | 3.378 | 3.116 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 383   | 683   | 650   | 533   |
| d_b, Bicycle Delay [s]                                   | 39.21 | 26.01 | 27.34 | 32.27 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.120 | 2.569 | 2.946 | 2.409 |
| Bicycle LOS  | B     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.713 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No            |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 277               | 107    | 30     | 18            | 204    | 308    | 92           | 614    | 1008   | 253          | 691    | 12     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 277               | 107    | 30     | 18            | 204    | 308    | 92           | 614    | 1008   | 253          | 691    | 12     |
| Peak Hour Factor                            | 0.7870            | 0.7870 | 0.7870 | 0.8900        | 0.8900 | 0.8900 | 0.9170       | 0.9170 | 0.9170 | 0.9370       | 0.9370 | 0.9370 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 88                | 34     | 10     | 5             | 57     | 87     | 25           | 167    | 275    | 68           | 184    | 3      |
| Total Analysis Volume [veh/h]               | 352               | 136    | 38     | 20            | 229    | 346    | 100          | 670    | 1099   | 270          | 737    | 13     |
| Presence of On-Street Parking               | No                |        | No     | No            |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 6        | 6       | 0       | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 30       | 30      | 0       | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 17       | 49      | 49      | 10       | 42      | 0       | 12       | 37      | 37      | 14       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0        | 7       | 0       | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 30      | 30      | 0        | 31      | 0       | 0        | 26      | 26      | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Maximum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 13    | 33    | 47    | 3     | 23    | 23    | 8     | 48    | 65    | 10    | 50    | 50    |
| g / C, Green / Cycle                    | 0.12  | 0.30  | 0.43  | 0.03  | 0.21  | 0.21  | 0.07  | 0.44  | 0.59  | 0.09  | 0.46  | 0.46  |
| (v / s)_i Volume / Saturation Flow Rate | 0.10  | 0.07  | 0.02  | 0.01  | 0.12  | 0.18  | 0.06  | 0.18  | 0.29  | 0.08  | 0.13  | 0.14  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 3800  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 415   | 571   | 814   | 47    | 395   | 395   | 127   | 1659  | 2248  | 320   | 1739  | 870   |
| d1, Uniform Delay [s]                   | 47.54 | 29.00 | 18.35 | 52.81 | 39.27 | 42.22 | 50.38 | 21.22 | 12.92 | 49.23 | 18.60 | 18.72 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.86  | 0.21  | 0.02  | 6.06  | 1.35  | 6.36  | 10.42 | 0.73  | 0.76  | 6.00  | 0.41  | 0.87  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |       |       |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.85   | 0.24   | 0.05  | 0.43  | 0.58   | 0.88   | 0.79   | 0.40   | 0.49   | 0.84   | 0.28   | 0.30   |
| d, Delay for Lane Group [s/veh]       | 52.40  | 29.22  | 18.37 | 58.87 | 40.62  | 48.58  | 60.80  | 21.95  | 13.69  | 55.23  | 19.01  | 19.58  |
| Lane Group LOS                        | D      | C      | B     | E     | D      | D      | E      | C      | B      | E      | B      | B      |
| Critical Lane Group                   | Yes    | No     | No    | No    | No     | Yes    | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.99   | 2.74   | 0.57  | 0.62  | 5.70   | 9.72   | 3.07   | 5.99   | 7.65   | 3.91   | 3.97   | 4.27   |
| 50th-Percentile Queue Length [ft/ln]  | 124.73 | 68.57  | 14.28 | 15.57 | 142.59 | 243.10 | 76.79  | 149.81 | 191.25 | 97.72  | 99.27  | 106.72 |
| 95th-Percentile Queue Length [veh/ln] | 8.65   | 4.94   | 1.03  | 1.12  | 9.62   | 14.84  | 5.53   | 10.01  | 12.19  | 7.04   | 7.15   | 7.66   |
| 95th-Percentile Queue Length [ft/ln]  | 216.31 | 123.43 | 25.70 | 28.03 | 240.50 | 370.95 | 138.22 | 250.18 | 304.65 | 175.90 | 178.69 | 191.44 |



**Movement, Approach, & Intersection Results**

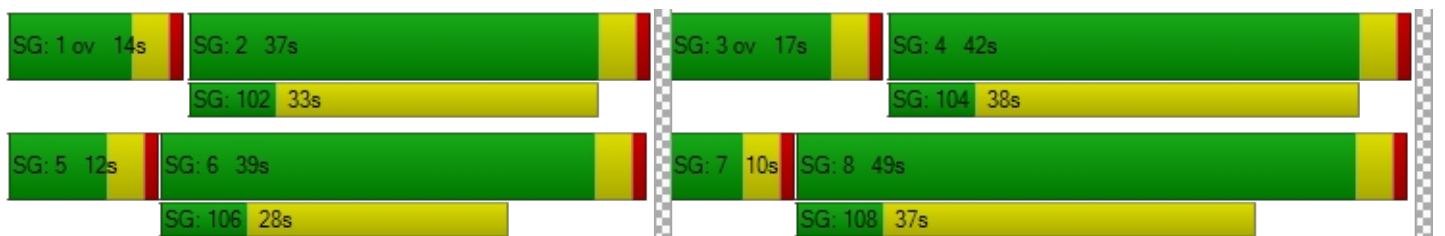
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.40 | 29.22 | 18.37 | 58.87 | 40.62 | 48.58 | 60.80 | 21.95 | 13.69 | 55.23 | 19.20 | 19.58 |
| Movement LOS                    | D     | C     | B     | E     | D     | D     | E     | C     | B     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 43.95 |       |       | 45.86 |       |       | 19.17 |       |       | 28.74 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 28.82 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.713 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.58 | 44.58 | 44.58 | 44.58 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.808 | 2.346 | 3.138 | 2.847 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 818   | 691   | 600   | 636   |
| d_b, Bicycle Delay [s]                                   | 19.23 | 23.59 | 26.97 | 25.59 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.428 | 2.541 | 3.102 | 2.121 |
| Bicycle LOS  | B     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 9.3   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.285 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No               |        |        | No               |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 40               | 5      | 16     | 4                | 0      | 5      | 6            | 654    | 43     | 22           | 932    | 2      |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 40               | 5      | 16     | 4                | 0      | 5      | 6            | 654    | 43     | 22           | 932    | 2      |
| Peak Hour Factor                            | 0.5360           | 0.5360 | 0.5360 | 0.4290           | 1.0000 | 0.4290 | 0.9490       | 0.9490 | 0.9490 | 0.9030       | 0.9030 | 0.9030 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 19               | 2      | 7      | 2                | 0      | 3      | 2            | 172    | 11     | 6            | 258    | 1      |
| Total Analysis Volume [veh/h]               | 75               | 9      | 30     | 9                | 0      | 12     | 6            | 689    | 45     | 24           | 1032   | 2      |
| Presence of On-Street Parking               | No               |        | No     | No               |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 6       | 0       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 30      | 0       | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 41      | 0       | 40      | 0       | 0       | 11       | 29      | 0       | 10       | 28      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 7       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 29      | 0       | 29      | 0       | 0       | 0        | 18      | 0       | 0        | 16      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         | No      |         |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 7     | 7     | 3     | 3     | 1     | 91   | 91   | 3     | 93   | 93   |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.03  | 0.03  | 0.01  | 0.75 | 0.75 | 0.03  | 0.77 | 0.77 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.02  | 0.01  | 0.01  | 0.00  | 0.20 | 0.19 | 0.01  | 0.18 | 0.19 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 106   | 112   | 46    | 49    | 17    | 1433 | 1433 | 50    | 2936 | 1468 |
| d1, Uniform Delay [s]                   | 55.48 | 54.28 | 57.26 | 57.34 | 59.07 | 4.50 | 4.48 | 57.47 | 3.77 | 3.81 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 8.40  | 1.86  | 2.03  | 2.59  | 11.67 | 0.44 | 0.43 | 6.82  | 0.18 | 0.39 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |       |       |       |       |        |        |       |       |       |
|---------------------------------------|--------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
| X, volume / capacity                  | 0.71   | 0.35  | 0.20  | 0.25  | 0.35  | 0.26   | 0.25   | 0.48  | 0.23  | 0.24  |
| d, Delay for Lane Group [s/veh]       | 63.88  | 56.14 | 59.29 | 59.93 | 70.74 | 4.94   | 4.91   | 64.29 | 3.96  | 4.21  |
| Lane Group LOS                        | E      | E     | E     | E     | E     | A      | A      | E     | A     | A     |
| Critical Lane Group                   | Yes    | No    | No    | Yes   | No    | Yes    | No     | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 2.48   | 1.19  | 0.29  | 0.39  | 0.24  | 2.61   | 2.54   | 0.81  | 2.00  | 2.21  |
| 50th-Percentile Queue Length [ft/ln]  | 61.93  | 29.81 | 7.35  | 9.81  | 5.93  | 65.25  | 63.61  | 20.34 | 50.09 | 55.14 |
| 95th-Percentile Queue Length [veh/ln] | 4.46   | 2.15  | 0.53  | 0.71  | 0.43  | 4.70   | 4.58   | 1.46  | 3.61  | 3.97  |
| 95th-Percentile Queue Length [ft/ln]  | 111.48 | 53.65 | 13.22 | 17.67 | 10.67 | 117.45 | 114.50 | 36.62 | 90.16 | 99.25 |

**Movement, Approach, & Intersection Results**

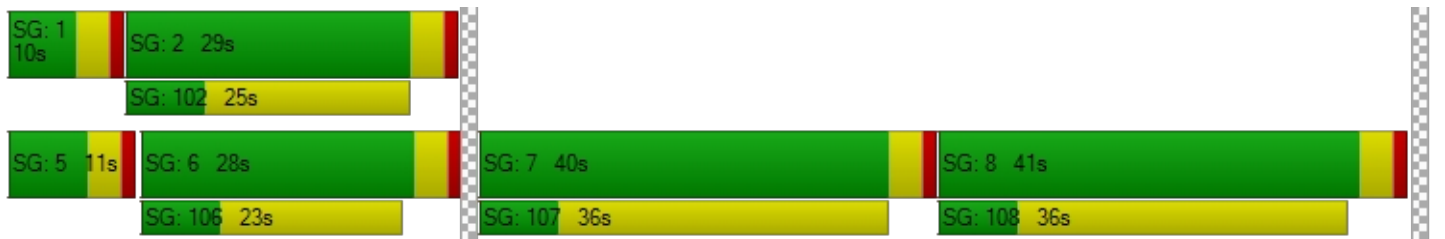
|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 63.88 | 56.14 | 56.14 | 59.29 | 0.00 | 59.93 | 70.74 | 4.92 | 4.91 | 64.29 | 4.04 | 4.21 |
| Movement LOS                    | E     | E     | E     | E     |      | E     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 61.23 |       |       | 59.66 |      |       | 5.46  |      |      | 5.41  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 9.31  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.285 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.013 | 1.966 | 2.769 | 2.757 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 617   | 600   | 417   | 400   |
| d_b, Bicycle Delay [s]                                   | 28.71 | 29.41 | 37.61 | 38.41 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.748 | 1.560 | 2.170 | 2.142 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 136.6 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.014 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound          |        |        |
| Lane Configuration           |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 0      | 1            | 0      | 0      | 1                  | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00               |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No                 |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes                |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 264             | 173    | 132    | 7               | 352    | 38     | 44           | 148    | 488    | 862                | 658    | 2      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 264             | 173    | 132    | 7               | 352    | 38     | 44           | 148    | 488    | 862                | 658    | 2      |
| Peak Hour Factor                            | 0.7800          | 0.7800 | 0.7800 | 0.6660          | 0.6660 | 0.6660 | 0.9130       | 0.9130 | 0.9130 | 0.9720             | 0.9720 | 0.9720 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 85              | 55     | 42     | 3               | 132    | 14     | 12           | 41     | 134    | 222                | 169    | 1      |
| Total Analysis Volume [veh/h]               | 338             | 222    | 169    | 11              | 529    | 57     | 48           | 162    | 535    | 887                | 677    | 2      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Unsigna | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 18       | 51      | 0       | 10       | 43      | 0       | 11       | 36      | 0       | 23       | 48      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 31      | 0       | 0        | 32      | 0       | 0        | 25      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L      | C     | L     | C     | C     | L     | C     | C     | L      | C     | C     |
|---|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| C, Cycle Length [s]                     | 120    | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120    | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00   | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 14     | 34    | 2     | 22    | 22    | 5     | 49    | 49    | 19     | 64    | 64    |
| g / C, Green / Cycle                    | 0.12   | 0.28  | 0.02  | 0.18  | 0.18  | 0.04  | 0.41  | 0.41  | 0.16   | 0.53  | 0.53  |
| (v / s)_i Volume / Saturation Flow Rate | 0.19   | 0.06  | 0.01  | 0.16  | 0.15  | 0.03  | 0.04  | 0.28  | 0.25   | 0.12  | 0.12  |
| s, saturation flow rate [veh/h]         | 1800   | 3800  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500   | 3800  | 1900  |
| c, Capacity [veh/h]                     | 211    | 1067  | 29    | 342   | 342   | 73    | 1562  | 781   | 555    | 2010  | 1005  |
| d1, Uniform Delay [s]                   | 53.00  | 32.98 | 58.45 | 47.85 | 47.60 | 56.75 | 21.75 | 28.99 | 50.51  | 15.09 | 15.19 |
| k, delay calibration                    | 0.27   | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11   | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 283.12 | 0.10  | 7.73  | 6.78  | 5.70  | 9.45  | 0.13  | 4.85  | 270.88 | 0.25  | 0.54  |
| d3, Initial Queue Delay [s]             | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| PF, progression factor                  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |       |        |        |       |       |        |         |        |        |
|---------------------------------------|--------|--------|-------|--------|--------|-------|-------|--------|---------|--------|--------|
| X, volume / capacity                  | 1.60   | 0.21   | 0.37  | 0.87   | 0.84   | 0.65  | 0.10  | 0.69   | 1.60    | 0.22   | 0.23   |
| d, Delay for Lane Group [s/veh]       | 336.12 | 33.07  | 66.18 | 54.64  | 53.30  | 66.20 | 21.89 | 33.83  | 321.39  | 15.35  | 15.73  |
| Lane Group LOS                        | F      | C      | E     | D      | D      | E     | C     | C      | F       | B      | B      |
| Critical Lane Group                   | Yes    | No     | No    | Yes    | No     | No    | No    | Yes    | Yes     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 22.92  | 2.50   | 0.39  | 9.27   | 8.87   | 1.63  | 1.45  | 13.52  | 29.19   | 3.30   | 3.56   |
| 50th-Percentile Queue Length [ft/ln]  | 573.07 | 62.52  | 9.86  | 231.63 | 221.75 | 40.71 | 36.13 | 337.90 | 729.75  | 82.50  | 89.00  |
| 95th-Percentile Queue Length [veh/ln] | 36.12  | 4.50   | 0.71  | 14.26  | 13.75  | 2.93  | 2.60  | 19.55  | 45.54   | 5.94   | 6.41   |
| 95th-Percentile Queue Length [ft/ln]  | 902.99 | 112.53 | 17.74 | 356.43 | 343.86 | 73.28 | 65.03 | 488.63 | 1138.50 | 148.50 | 160.19 |

**Movement, Approach, & Intersection Results**

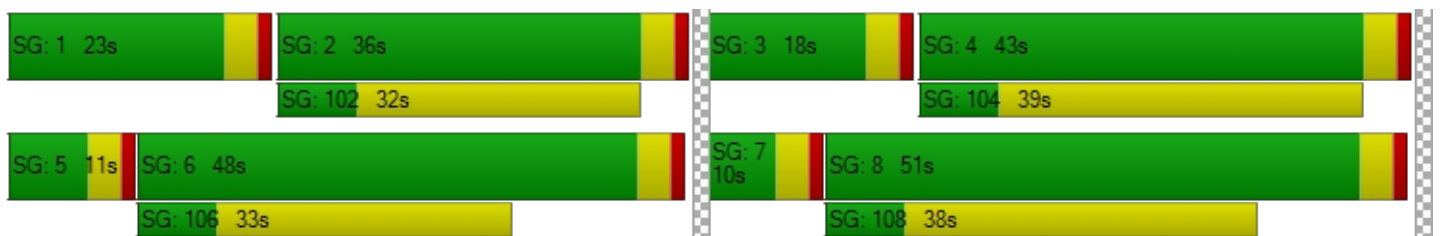
|                                 |        |       |      |       |       |       |       |       |       |        |       |       |
|---------------------------------|--------|-------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| d_M, Delay for Movement [s/veh] | 336.12 | 33.07 | 0.00 | 66.18 | 54.05 | 53.30 | 66.20 | 21.89 | 33.83 | 321.39 | 15.48 | 15.73 |
| Movement LOS                    | F      | C     |      | E     | D     | D     | E     | C     | C     | F      | B     | B     |
| d_A, Approach Delay [s/veh]     | 215.98 |       |      | 54.21 |       |       | 33.32 |       |       | 188.75 |       |       |
| Approach LOS                    | F      |       |      | D     |       |       | C     |       |       | F      |       |       |
| d_I, Intersection Delay [s/veh] | 136.60 |       |      |       |       |       |       |       |       |        |       |       |
| Intersection LOS                | F      |       |      |       |       |       |       |       |       |        |       |       |
| Intersection V/C                | 1.014  |       |      |       |       |       |       |       |       |        |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.875 |  |  | 2.483 |  |  | 2.861 |  |  | 2.951 |  |  |
| Crosswalk LOS  | C     |  |  | B     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 783   |  |  | 650   |  |  | 533   |  |  | 733   |  |  |
| d_b, Bicycle Delay [s]                                   | 22.22 |  |  | 27.35 |  |  | 32.28 |  |  | 24.08 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.022 |  |  | 2.052 |  |  | 1.969 |  |  | 2.421 |  |  |
| Bicycle LOS  | B     |  |  | B     |  |  | A     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.498 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ↱             |        |        | ↵                  |        |        | ↵                  |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Curb Present                 | No            |        |        | No            |        |        | No                 |        |        | No                 |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name  | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
|   |               |        |        |               |        |        |                    |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 4             | 1      | 1      | 0             | 0      | 22     | 13                 | 294    | 7      | 6                  | 1542   | 4      |
| Base Volume Adjustment Factor               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 4             | 1      | 1      | 0             | 0      | 22     | 13                 | 294    | 7      | 6                  | 1542   | 4      |
| Peak Hour Factor                            | 0.5000        | 0.5000 | 0.5000 | 1.0000        | 1.0000 | 0.6560 | 0.9190             | 0.9190 | 0.9190 | 0.9760             | 0.9760 | 0.9760 |
| Other Adjustment Factor                     | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 2             | 1      | 1      | 0             | 0      | 8      | 4                  | 80     | 2      | 2                  | 395    | 1      |
| Total Analysis Volume [veh/h]               | 8             | 2      | 2      | 0             | 0      | 34     | 14                 | 320    | 8      | 6                  | 1580   | 4      |
| Presence of On-Street Parking               | No            |        | No     | No            |        | No     | No                 |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 0       | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 0       | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 0.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 35      | 0       | 0       | 0       | 35      | 10       | 60      | 0       | 10       | 60      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 24      | 0       | 0       | 0       | 0       | 0        | 17      | 0       | 0        | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         |         | No      |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105  | 105  | 105   | 105  | 105  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 4     | 4     | 2     | 88   | 88   | 1     | 87   | 87   |
| g / C, Green / Cycle                    | 0.04  | 0.04  | 0.02  | 0.84 | 0.84 | 0.01  | 0.83 | 0.83 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.02  | 0.01  | 0.09 | 0.09 | 0.00  | 0.42 | 0.00 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900 | 1900 | 1900  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 123   | 69    | 35    | 1595 | 1595 | 18    | 3153 | 1576 |
| d1, Uniform Delay [s]                   | 49.07 | 49.63 | 50.85 | 1.48 | 1.48 | 51.65 | 2.61 | 1.53 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.34  | 5.30  | 7.00  | 0.13 | 0.13 | 9.84  | 0.57 | 0.00 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |       |        |      |
|---------------------------------------|-------|-------|-------|-------|-------|-------|--------|------|
| X, volume / capacity                  | 0.10  | 0.49  | 0.40  | 0.10  | 0.10  | 0.33  | 0.50   | 0.00 |
| d, Delay for Lane Group [s/veh]       | 49.41 | 54.93 | 57.85 | 1.61  | 1.61  | 61.48 | 3.18   | 1.53 |
| Lane Group LOS                        | D     | D     | E     | A     | A     | E     | A      | A    |
| Critical Lane Group                   | No    | Yes   | Yes   | No    | No    | No    | Yes    | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.32  | 0.98  | 0.43  | 0.38  | 0.38  | 0.21  | 3.05   | 0.01 |
| 50th-Percentile Queue Length [ft/ln]  | 7.91  | 24.38 | 10.79 | 9.44  | 9.39  | 5.17  | 76.27  | 0.24 |
| 95th-Percentile Queue Length [veh/ln] | 0.57  | 1.76  | 0.78  | 0.68  | 0.68  | 0.37  | 5.49   | 0.02 |
| 95th-Percentile Queue Length [ft/ln]  | 14.24 | 43.89 | 19.43 | 17.00 | 16.91 | 9.31  | 137.28 | 0.43 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 49.41 | 49.41 | 49.41 | 0.00  | 0.00 | 54.93 | 57.85 | 1.61 | 1.61 | 61.48 | 3.18 | 1.53 |
| Movement LOS                    | D     | D     | D     |       |      | D     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 49.41 |       |       | 54.93 |      |       | 3.91  |      |      | 3.40  |      |      |
| Approach LOS                    | D     |       |       | D     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 4.65  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.498 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.07 | 42.07 | 0.00  | 42.07 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.735 | 1.748 | 0.000 | 2.771 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 590   | 590   | 1067  | 1067  |
| d_b, Bicycle Delay [s]                                   | 26.07 | 26.07 | 11.43 | 11.43 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.579 | 1.560 | 1.842 | 2.871 |
| Bicycle LOS  | A     | A     | A     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 40.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.785 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 73                      | 115    | 93     | 610                     | 755    | 141    | 72           | 487    | 46     | 74           | 540    | 265    |
| Base Volume Input [veh/h]                   | 73                      | 115    | 93     | 610                     | 755    | 141    | 72           | 487    | 46     | 74           | 540    | 265    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 73                      | 115    | 93     | 610                     | 755    | 141    | 72           | 487    | 46     | 74           | 540    | 265    |
| Peak Hour Factor                            | 0.8430                  | 0.8430 | 0.8430 | 0.8910                  | 0.8910 | 0.8910 | 0.8600       | 0.8600 | 0.8600 | 0.7640       | 0.7640 | 0.7640 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 22                      | 34     | 28     | 171                     | 212    | 40     | 21           | 142    | 13     | 24           | 177    | 87     |
| Total Analysis Volume [veh/h]               | 87                      | 136    | 110    | 685                     | 847    | 158    | 84           | 566    | 53     | 97           | 707    | 347    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 32       | 61      | 0       | 10       | 39      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 30      | 0       | 0        | 28      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 35    | 35    | 26    | 55    | 55    | 6     | 37    | 37    | 6     | 37    | 37    |
| g / C, Green / Cycle                    | 0.05  | 0.29  | 0.29  | 0.21  | 0.46  | 0.46  | 0.05  | 0.31  | 0.31  | 0.05  | 0.31  | 0.31  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02  | 0.04  | 0.06  | 0.20  | 0.45  | 0.08  | 0.02  | 0.15  | 0.03  | 0.03  | 0.19  | 0.18  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 165   | 1113  | 556   | 750   | 874   | 874   | 164   | 1184  | 592   | 168   | 1188  | 594   |
| d1, Uniform Delay [s]                   | 55.85 | 31.12 | 31.85 | 46.05 | 31.59 | 19.09 | 55.84 | 33.42 | 29.26 | 55.92 | 34.83 | 34.69 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 2.58  | 0.05  | 0.17  | 4.85  | 8.66  | 0.10  | 2.44  | 1.39  | 0.30  | 3.10  | 2.20  | 4.17  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |        |        |        |        |       |        |       |       |        |        |
|---------------------------------------|-------|-------|--------|--------|--------|--------|-------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.53  | 0.12  | 0.20   | 0.91   | 0.97   | 0.18   | 0.51  | 0.48   | 0.09  | 0.58  | 0.60   | 0.58   |
| d, Delay for Lane Group [s/veh]       | 58.43 | 31.17 | 32.03  | 50.90  | 40.25  | 19.19  | 58.28 | 34.80  | 29.56 | 59.03 | 37.04  | 38.85  |
| Lane Group LOS                        | E     | C     | C      | D      | D      | B      | E     | C      | C     | E     | D      | D      |
| Critical Lane Group                   | Yes   | No    | No     | No     | Yes    | No     | Yes   | No     | No    | No    | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 1.35  | 1.47  | 2.44   | 10.43  | 12.60  | 2.63   | 1.30  | 6.90   | 1.14  | 1.51  | 9.07   | 9.19   |
| 50th-Percentile Queue Length [ft/ln]  | 33.68 | 36.65 | 61.03  | 260.73 | 314.96 | 65.70  | 32.47 | 172.57 | 28.59 | 37.79 | 226.65 | 229.86 |
| 95th-Percentile Queue Length [veh/ln] | 2.43  | 2.64  | 4.39   | 15.73  | 18.42  | 4.73   | 2.34  | 11.21  | 2.06  | 2.72  | 14.00  | 14.17  |
| 95th-Percentile Queue Length [ft/ln]  | 60.63 | 65.97 | 109.86 | 393.14 | 460.49 | 118.26 | 58.44 | 280.30 | 51.46 | 68.02 | 350.10 | 354.18 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 58.43 | 31.17 | 32.03 | 50.90 | 40.25 | 19.19 | 58.28 | 34.80 | 29.56 | 59.03 | 37.04 | 38.85 |
| Movement LOS                    | E     | C     | C     | D     | D     | B     | E     | C     | C     | E     | D     | D     |
| d_A, Approach Delay [s/veh]     | 38.58 |       |       | 42.60 |       |       | 37.21 |       |       | 39.44 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | D     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 40.34 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.785 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.50 | 49.50 | 49.50 | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.793 | 2.922 | 2.838 | 2.958 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 583   | 950   | 583   | 583   |
| d_b, Bicycle Delay [s]                                   | 30.10 | 16.54 | 30.10 | 30.10 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.834 | 2.954 | 2.140 | 2.509 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.746 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐           |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 228               | 6      | 298    | 53                | 28     | 8      | 2            | 883    | 294    | 332          | 724    | 10     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 228               | 6      | 298    | 53                | 28     | 8      | 2            | 883    | 294    | 332          | 724    | 10     |
| Peak Hour Factor                            | 0.8160            | 0.8160 | 0.8160 | 0.7410            | 0.7410 | 0.7410 | 0.8560       | 0.8560 | 0.8560 | 0.9140       | 0.9140 | 0.9140 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 70                | 2      | 91     | 18                | 9      | 3      | 1            | 258    | 86     | 91           | 198    | 3      |
| Total Analysis Volume [veh/h]               | 279               | 7      | 365    | 72                | 38     | 11     | 2            | 1032   | 343    | 363          | 792    | 11     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 21       | 58      | 58      | 0       | 37      | 0       | 10       | 38      | 0       | 19       | 47      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 26      | 0       | 26      | 0       | 0        | 27      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | C     | L     | C    | C    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115  | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 11    | 22    | 41    | 7     | 7     | 0     | 66    | 66    | 15    | 81   | 81   |
| g / C, Green / Cycle                    | 0.10  | 0.19  | 0.36  | 0.06  | 0.06  | 0.00  | 0.57  | 0.57  | 0.13  | 0.70 | 0.70 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.00  | 0.19  | 0.04  | 0.03  | 0.00  | 0.38  | 0.35  | 0.10  | 0.21 | 0.21 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1800  | 1900  | 1900  | 3500  | 1900 | 1900 |
| c, Capacity [veh/h]                     | 349   | 365   | 680   | 135   | 110   | 8     | 1088  | 1088  | 458   | 1329 | 1329 |
| d1, Uniform Delay [s]                   | 50.69 | 37.69 | 29.37 | 53.20 | 52.43 | 57.12 | 16.81 | 16.13 | 48.50 | 6.60 | 6.59 |
| k, delay calibration                    | 0.11  | 0.11  | 0.26  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.27  | 0.02  | 1.57  | 3.26  | 2.81  | 17.13 | 3.08  | 2.54  | 3.14  | 0.59 | 0.58 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |       |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.80   | 0.02  | 0.54   | 0.53  | 0.45  | 0.26  | 0.65   | 0.61   | 0.79   | 0.30   | 0.30   |
| d, Delay for Lane Group [s/veh]       | 54.96  | 37.71 | 30.94  | 56.47 | 55.24 | 74.25 | 19.89  | 18.67  | 51.65  | 7.19   | 7.18   |
| Lane Group LOS                        | D      | D     | C      | E     | E     | E     | B      | B      | D      | A      | A      |
| Critical Lane Group                   | No     | No    | Yes    | No    | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.13   | 0.16  | 8.28   | 2.16  | 1.46  | 0.09  | 13.18  | 11.70  | 5.24   | 3.63   | 3.61   |
| 50th-Percentile Queue Length [ft/ln]  | 103.31 | 4.08  | 206.93 | 54.12 | 36.39 | 2.36  | 329.53 | 292.39 | 131.04 | 90.82  | 90.28  |
| 95th-Percentile Queue Length [veh/ln] | 7.44   | 0.29  | 13.00  | 3.90  | 2.62  | 0.17  | 19.14  | 17.30  | 9.00   | 6.54   | 6.50   |
| 95th-Percentile Queue Length [ft/ln]  | 185.96 | 7.35  | 324.89 | 97.41 | 65.51 | 4.25  | 478.38 | 432.61 | 224.91 | 163.48 | 162.51 |

**Movement, Approach, & Intersection Results**

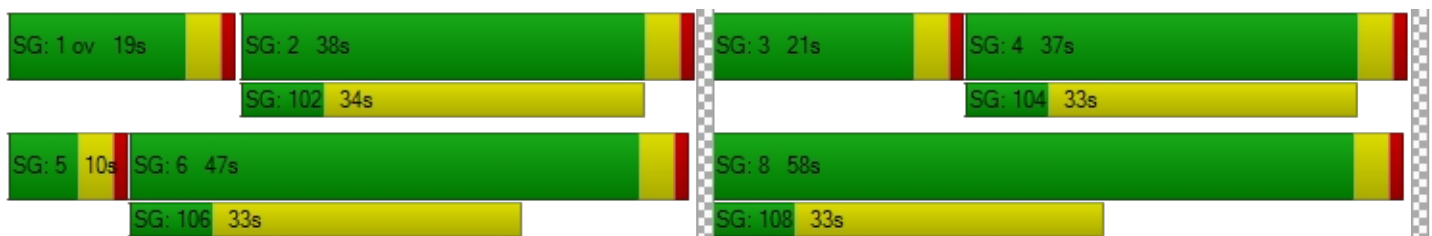
|                                 |       |       |       |       |       |       |       |       |       |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 54.96 | 37.71 | 30.94 | 56.47 | 55.24 | 55.24 | 74.25 | 19.51 | 18.67 | 51.65 | 7.18 | 7.18 |
| Movement LOS                    | D     | D     | C     | E     | E     | E     | E     | B     | B     | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 41.31 |       |       | 55.97 |       |       | 19.38 |       |       | 21.03 |      |      |
| Approach LOS                    | D     |       |       | E     |       |       | B     |       |       | C     |      |      |
| d_I, Intersection Delay [s/veh] | 25.60 |       |       |       |       |       |       |       |       |       |      |      |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |      |      |
| Intersection V/C                | 0.746 |       |       |       |       |       |       |       |       |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.691 | 1.998 | 2.791 | 2.995 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 939   | 574   | 591   | 748   |
| d_b, Bicycle Delay [s]                                   | 16.19 | 29.25 | 28.54 | 22.56 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.634 | 1.759 | 2.696 | 2.522 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**





|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.707 |

**Intersection Setup**

| Name                         | N Associated Road   |        |        | N Associated Road   |        |        | Birch Street  |        |        | Birch Street  |        |        |
|------------------------------|---|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |  |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1      | 1   | 0      | 1      | 1   | 0      | 0      | 1   | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 | No  |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes   |        |        | Yes   |        |        | Yes   |        |        | No  |        |        |

**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Peak Hour Factor                            | 0.5500            | 0.5500 | 0.5500 | 0.8490            | 0.8490 | 0.8490 | 0.8890       | 0.8890 | 0.8890 | 0.8800       | 0.8800 | 0.8800 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 1                 | 1      | 2      | 45                | 1      | 129    | 87           | 228    | 4      | 2            | 198    | 22     |
| Total Analysis Volume [veh/h]               | 5                 | 5      | 9      | 179               | 2      | 515    | 348          | 911    | 18     | 9            | 791    | 89     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 44       | 37      | 0       | 39       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 3     | 3     | 3     | 25    | 25    | 62    | 27    | 75    | 75    | 2     | 50    | 50    |
| g / C, Green / Cycle                    | 0.02  | 0.02  | 0.02  | 0.21  | 0.21  | 0.52  | 0.22  | 0.62  | 0.62  | 0.01  | 0.41  | 0.41  |
| (v / s)_i Volume / Saturation Flow Rate | 0.00  | 0.00  | 0.00  | 0.05  | 0.05  | 0.27  | 0.19  | 0.25  | 0.24  | 0.01  | 0.21  | 0.05  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 79    | 46    | 46    | 370   | 370   | 986   | 401   | 1184  | 1184  | 25    | 1574  | 787   |
| d1, Uniform Delay [s]                   | 57.30 | 57.29 | 57.41 | 39.90 | 39.90 | 19.04 | 44.97 | 11.31 | 11.28 | 58.67 | 26.01 | 21.61 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.15  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.33  | 1.01  | 2.01  | 0.34  | 0.34  | 1.98  | 7.82  | 0.98  | 0.97  | 8.46  | 1.15  | 0.29  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |        |        |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.06  | 0.11  | 0.19  | 0.24   | 0.24   | 0.52   | 0.87   | 0.39   | 0.39   | 0.36  | 0.50   | 0.11  |
| d, Delay for Lane Group [s/veh]       | 57.63 | 58.30 | 59.42 | 40.24  | 40.24  | 21.02  | 52.80  | 12.29  | 12.26  | 67.12 | 27.16  | 21.90 |
| Lane Group LOS                        | E     | E     | E     | D      | D      | C      | D      | B      | B      | E     | C      | C     |
| Critical Lane Group                   | No    | No    | Yes   | No     | No     | Yes    | Yes    | No     | No     | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.16  | 0.16  | 0.29  | 2.28   | 2.28   | 9.84   | 10.81  | 6.29   | 6.24   | 0.33  | 8.56   | 1.62  |
| 50th-Percentile Queue Length [ft/ln]  | 3.90  | 4.04  | 7.35  | 57.06  | 57.11  | 245.92 | 270.27 | 157.32 | 156.03 | 8.26  | 214.05 | 40.43 |
| 95th-Percentile Queue Length [veh/ln] | 0.28  | 0.29  | 0.53  | 4.11   | 4.11   | 14.98  | 16.20  | 10.41  | 10.34  | 0.59  | 13.36  | 2.91  |
| 95th-Percentile Queue Length [ft/ln]  | 7.02  | 7.28  | 13.23 | 102.70 | 102.79 | 374.51 | 405.07 | 260.17 | 258.45 | 14.86 | 334.01 | 72.78 |

**Movement, Approach, & Intersection Results**

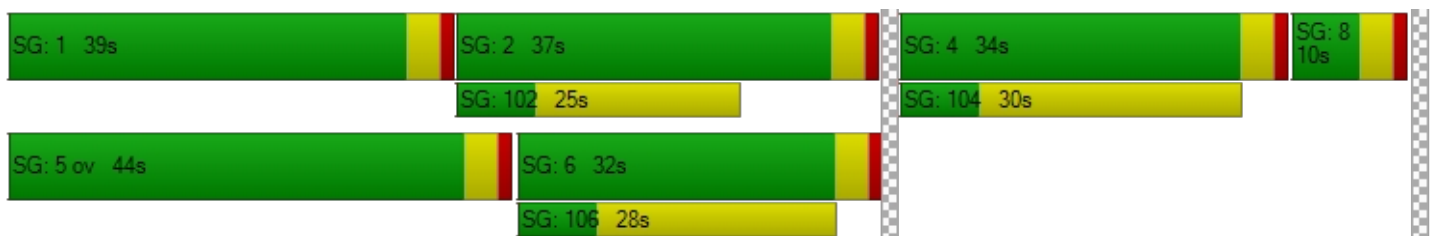
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 57.63 | 58.30 | 59.42 | 40.24 | 40.24 | 21.02 | 52.80 | 12.28 | 12.26 | 67.12 | 27.16 | 21.90 |
| Movement LOS                    | E     | E     | E     | D     | D     | C     | D     | B     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 58.66 |       |       | 26.02 |       |       | 23.32 |       |       | 27.04 |       |       |
| Approach LOS                    | E     |       |       | C     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 25.35 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.707 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 0.0   |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 0.00  |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.157 |  |  | 2.422 |  |  | 2.825 |  |  | 0.000 |  |  |
| Crosswalk LOS  | B     |  |  | B     |  |  | C     |  |  | F     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 100   |  |  | 500   |  |  | 550   |  |  | 467   |  |  |
| d_b, Bicycle Delay [s]                                   | 54.17 |  |  | 33.76 |  |  | 31.55 |  |  | 35.28 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.591 |  |  | 2.708 |  |  | 2.613 |  |  | 2.293 |  |  |
| Bicycle LOS  | A     |  |  | B     |  |  | B     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 36.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.596 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |



**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 130               | 209    | 89     | 427               | 958    | 171    | 36           | 533    | 335    | 60           | 411    | 209    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 130               | 209    | 89     | 427               | 958    | 171    | 36           | 533    | 335    | 60           | 411    | 209    |
| Peak Hour Factor                            | 0.8520            | 0.8520 | 0.8520 | 0.8550            | 0.8550 | 0.8550 | 0.8890       | 0.8890 | 0.8890 | 0.8090       | 0.8090 | 0.8090 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 38                | 61     | 26     | 125               | 280    | 50     | 10           | 150    | 94     | 19           | 127    | 65     |
| Total Analysis Volume [veh/h]               | 153               | 245    | 104    | 499               | 1120   | 200    | 40           | 600    | 377    | 74           | 508    | 258    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 11       | 37      | 0       | 34       | 60      | 0       | 10       | 39      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 0       | 0        | 26      | 0       | 0        | 28      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 7     | 20    | 20    | 20    | 33    | 33    | 4     | 58    | 58    | 6     | 60    | 60    |
| g / C, Green / Cycle                    | 0.06  | 0.16  | 0.16  | 0.17  | 0.27  | 0.27  | 0.04  | 0.49  | 0.49  | 0.05  | 0.50  | 0.50  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.06  | 0.06  | 0.14  | 0.23  | 0.23  | 0.02  | 0.16  | 0.20  | 0.04  | 0.13  | 0.14  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 1800  | 3800  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 207   | 626   | 313   | 581   | 1032  | 516   | 68    | 1844  | 922   | 91    | 1894  | 947   |
| d1, Uniform Delay [s]                   | 55.58 | 44.64 | 44.53 | 48.71 | 41.55 | 41.24 | 56.85 | 18.88 | 19.84 | 56.41 | 17.44 | 17.48 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.14  | 0.37  | 0.70  | 3.86  | 2.23  | 3.73  | 7.89  | 0.47  | 1.34  | 15.38 | 0.35  | 0.71  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.74   | 0.38   | 0.36   | 0.86   | 0.86   | 0.84   | 0.59  | 0.33   | 0.41   | 0.81   | 0.27   | 0.27   |
| d, Delay for Lane Group [s/veh]       | 60.72  | 45.02  | 45.23  | 52.58  | 43.78  | 44.97  | 64.75 | 19.35  | 21.18  | 71.79  | 17.79  | 18.19  |
| Lane Group LOS                        | E      | D      | D      | D      | D      | D      | E     | B      | C      | E      | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No    | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.43   | 3.17   | 3.07   | 7.57   | 12.71  | 12.53  | 1.34  | 5.20   | 7.05   | 2.61   | 4.14   | 4.31   |
| 50th-Percentile Queue Length [ft/ln]  | 60.69  | 79.25  | 76.77  | 189.17 | 317.66 | 313.28 | 33.60 | 129.92 | 176.15 | 65.28  | 103.53 | 107.76 |
| 95th-Percentile Queue Length [veh/ln] | 4.37   | 5.71   | 5.53   | 12.08  | 18.55  | 18.34  | 2.42  | 8.94   | 11.40  | 4.70   | 7.45   | 7.72   |
| 95th-Percentile Queue Length [ft/ln]  | 109.24 | 142.64 | 138.18 | 301.95 | 463.81 | 458.42 | 60.48 | 223.39 | 284.98 | 117.50 | 186.36 | 192.88 |

**Movement, Approach, & Intersection Results**

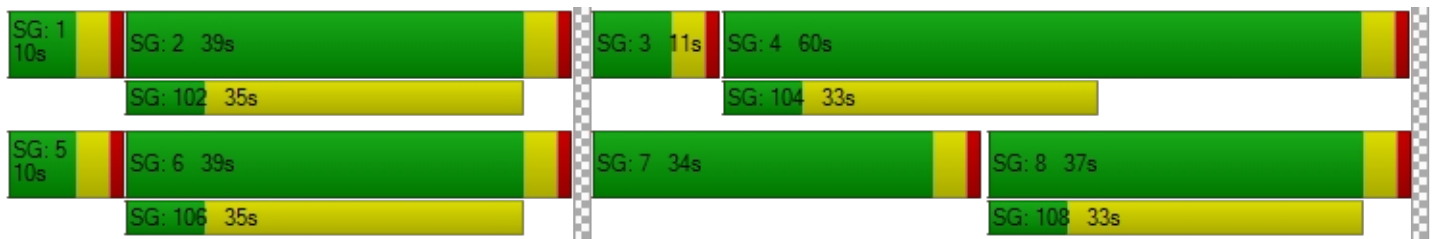
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 60.72 | 45.03 | 45.23 | 52.58 | 44.02 | 44.97 | 64.75 | 19.35 | 21.18 | 71.79 | 17.79 | 18.19 |
| Movement LOS                    | E     | D     | D     | D     | D     | D     | E     | B     | C     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 49.85 |       |       | 46.47 |       |       | 21.82 |       |       | 22.67 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 36.09 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.596 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.992 | 3.027 | 2.772 | 2.799 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 550   | 933   | 583   | 583   |
| d_b, Bicycle Delay [s]                                   | 31.55 | 17.08 | 30.12 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.836 | 2.560 | 2.399 | 2.253 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 105.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.824 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 130             | 196    | 13     | 718             | 755    | 243    | 60           | 418    | 130    | 12         | 340    | 305    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 130             | 196    | 13     | 718             | 755    | 243    | 60           | 418    | 130    | 12         | 340    | 305    |
| Peak Hour Factor                            | 0.7760          | 0.7760 | 0.7760 | 0.9030          | 0.9030 | 0.9030 | 0.9050       | 0.9050 | 0.9050 | 0.8810     | 0.8810 | 0.8810 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 42              | 63     | 4      | 199             | 209    | 67     | 17           | 115    | 36     | 3          | 96     | 87     |
| Total Analysis Volume [veh/h]               | 168             | 253    | 17     | 795             | 836    | 269    | 66           | 462    | 144    | 14         | 386    | 346    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 18       | 38      | 0       | 36       | 56      | 0       | 10       | 36      | 0       | 10       | 36      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L      | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120    | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 13    | 20    | 20    | 32     | 39    | 39    | 5     | 50    | 50    | 2     | 47    | 47    |
| g / C, Green / Cycle                    | 0.11  | 0.16  | 0.16  | 0.27   | 0.32  | 0.32  | 0.04  | 0.42  | 0.42  | 0.02  | 0.39  | 0.39  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.07  | 0.07  | 0.44   | 0.29  | 0.29  | 0.02  | 0.17  | 0.15  | 0.01  | 0.10  | 0.18  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800   | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 196   | 310   | 310   | 480    | 610   | 610   | 158   | 793   | 793   | 35    | 1488  | 744   |
| d1, Uniform Delay [s]                   | 52.58 | 45.26 | 45.21 | 44.04  | 39.09 | 38.97 | 55.77 | 24.42 | 24.07 | 58.15 | 24.73 | 27.16 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50   | 0.22  | 0.21  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 10.30 | 0.97  | 0.95  | 305.06 | 10.28 | 9.55  | 1.74  | 1.48  | 1.31  | 7.08  | 0.42  | 2.08  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |        |       |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|--------|-------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.86   | 0.44   | 0.43   | 1.66    | 0.91   | 0.90   | 0.42  | 0.40   | 0.37   | 0.40  | 0.26   | 0.46   |
| d, Delay for Lane Group [s/veh]       | 62.88  | 46.24  | 46.16  | 349.09  | 49.37  | 48.51  | 57.51 | 25.91  | 25.39  | 65.23 | 25.15  | 29.25  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D      | E     | C      | C      | E     | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes     | No     | No     | Yes   | No     | No     | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 5.53   | 3.75   | 3.69   | 54.75   | 17.22  | 16.92  | 1.01  | 6.55   | 5.98   | 0.49  | 3.82   | 7.78   |
| 50th-Percentile Queue Length [ft/ln]  | 138.33 | 93.78  | 92.21  | 1368.68 | 430.52 | 423.11 | 25.31 | 163.79 | 149.42 | 12.25 | 95.50  | 194.53 |
| 95th-Percentile Queue Length [veh/ln] | 9.39   | 6.75   | 6.64   | 84.37   | 24.03  | 23.67  | 1.82  | 10.75  | 9.99   | 0.88  | 6.88   | 12.36  |
| 95th-Percentile Queue Length [ft/ln]  | 234.78 | 168.81 | 165.98 | 2109.33 | 600.66 | 591.78 | 45.56 | 268.74 | 249.66 | 22.05 | 171.90 | 308.90 |



**Movement, Approach, & Intersection Results**

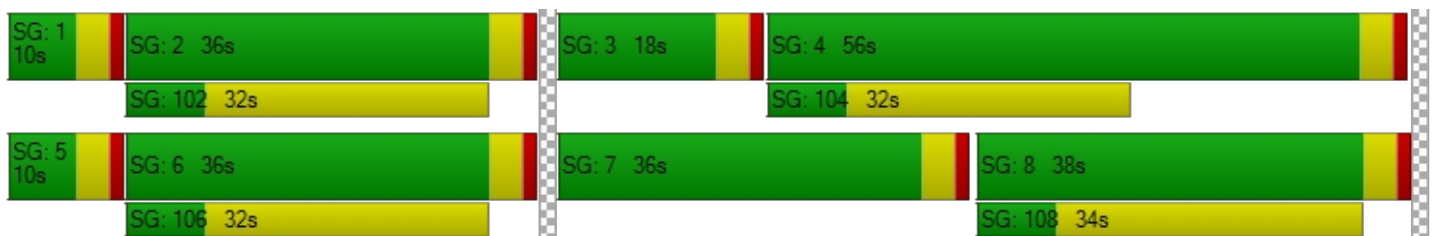
|                                 |        |       |       |        |       |       |       |       |       |       |       |       |
|---------------------------------|--------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 62.88  | 46.20 | 46.16 | 349.09 | 49.08 | 48.51 | 57.51 | 25.74 | 25.39 | 65.23 | 25.15 | 29.25 |
| Movement LOS                    | E      | D     | D     | F      | D     | D     | E     | C     | C     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 52.60  |       |       | 174.53 |       |       | 28.78 |       |       | 27.80 |       |       |
| Approach LOS                    | D      |       |       | F      |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 105.09 |       |       |        |       |       |       |       |       |       |       |       |
| Intersection LOS                | F      |       |       |        |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.824  |       |       |        |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.593 |  |  | 2.814 |  |  | 2.710 |  |  | 2.795 |  |  |
| Crosswalk LOS  | B     |  |  | C     |  |  | B     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 567   |  |  | 866   |  |  | 533   |  |  | 533   |  |  |
| d_b, Bicycle Delay [s]                                   | 30.83 |  |  | 19.28 |  |  | 32.28 |  |  | 32.28 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.921 |  |  | 3.127 |  |  | 2.114 |  |  | 2.175 |  |  |
| Bicycle LOS  | A     |  |  | C     |  |  | B     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 6.8   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.767 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           |            |        |            |        |                |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Curb Present                 | No         |        | No         |        | No             |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |

**Volumes**

| Name  | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
|   |            |        |            |        |                |        |
| Base Volume Input [veh/h]                   | 10         | 665    | 1202       | 10     | 8              | 33     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0              | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]                 | 10         | 665    | 1202       | 10     | 8              | 33     |
| Peak Hour Factor                            | 0.8540     | 0.8540 | 0.9370     | 0.9370 | 0.5560         | 0.5560 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 3          | 195    | 321        | 3      | 4              | 15     |
| Total Analysis Volume [veh/h]               | 12         | 779    | 1283       | 11     | 14             | 59     |
| Presence of On-Street Parking               | No         | No     | No         | No     | No             | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0          | 0      | 0              | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        | 0          |        | 0              |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        | 0          |        | 0              |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]                 | 0          |        | 0          |        | 0              |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|------------|------------|------------|------------|------------|------------|
| Signal Group                 | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |            |            |            |            |            |            |
| Lead / Lag                   | -          | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 0          | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 0          | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 0.0        | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 0          | 82         | 82         | 0          | 38         | 0          |
| Vehicle Extension [s]        | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0          | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0          | 0          | 14         | 0          | 15         | 0          |
| Delayed Vehicle Green [s]    | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |            | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               |            | No         | No         |            | No         |            |
| Maximum Recall               |            | No         | No         |            | No         |            |
| Pedestrian Recall            |            | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | R    | C     |
|---|------|------|------|------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           | 106  | 106  | 106  | 106  | 6     |
| g / C, Green / Cycle                    | 0.88 | 0.88 | 0.88 | 0.88 | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.41 | 0.68 | 0.01 | 0.04  |
| s, saturation flow rate [veh/h]         | 1800 | 1900 | 1900 | 1900 | 1800  |
| c, Capacity [veh/h]                     | 1151 | 1673 | 1673 | 1673 | 95    |
| d1, Uniform Delay [s]                   | 0.86 | 1.45 | 2.64 | 0.86 | 56.05 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| d2, Incremental Delay [s]               | 0.02 | 0.93 | 3.43 | 0.01 | 12.05 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |

**Lane Group Results**

|                                       |      |       |        |      |        |
|---------------------------------------|------|-------|--------|------|--------|
| X, volume / capacity                  | 0.01 | 0.47  | 0.77   | 0.01 | 0.77   |
| d, Delay for Lane Group [s/veh]       | 0.88 | 2.39  | 6.07   | 0.87 | 68.10  |
| Lane Group LOS                        | A    | A     | A      | A    | E      |
| Critical Lane Group                   | No   | No    | Yes    | No   | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 0.02 | 1.89  | 5.94   | 0.02 | 2.50   |
| 50th-Percentile Queue Length [ft/ln]  | 0.46 | 47.13 | 148.40 | 0.39 | 62.51  |
| 95th-Percentile Queue Length [veh/ln] | 0.03 | 3.39  | 9.93   | 0.03 | 4.50   |
| 95th-Percentile Queue Length [ft/ln]  | 0.83 | 84.83 | 248.29 | 0.70 | 112.52 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 0.88  | 2.39 | 6.07 | 0.87 | 68.10 | 68.10 |
| Movement LOS                    | A     | A    | A    | A    | E     | E     |
| d_A, Approach Delay [s/veh]     | 2.37  |      | 6.03 |      | 68.10 |       |
| Approach LOS                    | A     |      | A    |      | E     |       |
| d_I, Intersection Delay [s/veh] | 6.78  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.767 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.48 | 0.00  | 49.48 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.647 | 0.000 | 1.792 |
| Crosswalk LOS  | B     | F     | A     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1301  | 1301  | 567   |
| d_b, Bicycle Delay [s]                                   | 7.34  | 7.34  | 30.79 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.865 | 3.695 | 1.680 |
| Bicycle LOS  | C     | D     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 14.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.557 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐              |        |        | ⇐                |        |        | ⇐         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Curb Present                 |                |        |        | No               |        |        | No               |        |        | No        |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name  |        |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |        |        |        |                |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 0      | 0      | 0      | 558            | 0      | 445    | 0                | 1366   | 619    | 0                | 1589   | 174    |
| Base Volume Adjustment Factor               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00   | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0      | 0      | 0      | 558            | 0      | 445    | 0                | 1366   | 619    | 0                | 1589   | 174    |
| Peak Hour Factor                            | 1.0000 | 1.0000 | 1.0000 | 0.8810         | 1.0000 | 0.8810 | 1.0000           | 0.9270 | 0.9270 | 1.0000           | 0.9400 | 0.9400 |
| Other Adjustment Factor                     | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0      | 0      | 0      | 158            | 0      | 126    | 0                | 368    | 167    | 0                | 423    | 46     |
| Total Analysis Volume [veh/h]               | 0      | 0      | 0      | 633            | 0      | 505    | 0                | 1474   | 668    | 0                | 1690   | 185    |
| Presence of On-Street Parking               |        |        |        | No             |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 64    | 0       | 0     | 0       | 26      | 0       | 0       | 26      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 15      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | C    | C    |
|---|-------|-------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 23    | 23    | 23    | 59   | 59   |
| g / C, Green / Cycle                    | 0.26  | 0.26  | 0.26  | 0.65 | 0.65 |
| (v / s)_i Volume / Saturation Flow Rate | 0.21  | 0.21  | 0.20  | 0.26 | 0.30 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 5700 | 5700 |
| c, Capacity [veh/h]                     | 461   | 461   | 486   | 3734 | 3734 |
| d1, Uniform Delay [s]                   | 31.51 | 31.51 | 31.08 | 7.21 | 7.60 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.77  | 3.77  | 2.76  | 0.31 | 0.40 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.82   | 0.82   | 0.78   | 0.39   | 0.45   |
| d, Delay for Lane Group [s/veh]       | 35.28  | 35.28  | 33.84  | 7.52   | 7.99   |
| Lane Group LOS                        | D      | D      | C      | A      | A      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 8.02   | 8.02   | 7.81   | 3.91   | 4.74   |
| 50th-Percentile Queue Length [ft/ln]  | 200.54 | 200.54 | 195.22 | 97.85  | 118.39 |
| 95th-Percentile Queue Length [veh/ln] | 12.67  | 12.67  | 12.39  | 7.04   | 8.30   |
| 95th-Percentile Queue Length [ft/ln]  | 316.66 | 316.66 | 309.79 | 176.12 | 207.61 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|-------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 35.28 | 0.00 | 34.20 | 0.00 | 7.52 | 0.00 | 0.00 | 7.99 | 0.00 |
| Movement LOS                    |       |      |      | D     |      | C     |      | A    |      |      | A    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 34.80 |      |       | 7.52 |      |      | 7.99 |      |      |
| Approach LOS                    | A     |      |      | C     |      |       | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 14.92 |      |      |       |      |       |      |      |      |      |      |      |
| Intersection LOS                | B     |      |      |       |      |       |      |      |      |      |      |      |
| Intersection V/C                | 0.557 |      |      |       |      |       |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 0.000 | 2.408 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                   | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 3.437 | 2.370 | 2.489 |
| Bicycle LOS  | D     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.618 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No             |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]                   | 803            | 43     | 761    | 0               | 0      | 50     | 116              | 1241   | 515    | 0                | 1355   | 18     |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 803            | 43     | 761    | 0               | 0      | 50     | 116              | 1241   | 515    | 0                | 1355   | 18     |
| Peak Hour Factor                            | 0.9080         | 0.9080 | 0.9080 | 1.0000          | 1.0000 | 0.6820 | 0.8790           | 0.8790 | 0.8790 | 1.0000           | 0.8940 | 0.8940 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 221            | 12     | 210    | 0               | 0      | 18     | 33               | 353    | 146    | 0                | 379    | 5      |
| Total Analysis Volume [veh/h]               | 884            | 47     | 838    | 0               | 0      | 73     | 132              | 1412   | 586    | 0                | 1516   | 20     |
| Presence of On-Street Parking               | No             |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0       | 6     | 6        | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0       | 30    | 30       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0     | 1.0   | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0     | 47    | 0     | 0     | 0       | 10    | 13       | 43      | 0       | 0       | 30      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 22      | 0       | 0       | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       |         | No    |          | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Maximum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Pedestrian Recall            |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | R     | L     | C     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 31    | 31    | 31    | 5     | 9     | 52    | 39    | 39    |
| g / C, Green / Cycle                    | 0.31  | 0.31  | 0.31  | 0.05  | 0.09  | 0.52  | 0.39  | 0.39  |
| (v / s)_i Volume / Saturation Flow Rate | 0.25  | 0.25  | 0.24  | 0.02  | 0.07  | 0.25  | 0.20  | 0.20  |
| s, saturation flow rate [veh/h]         | 3500  | 1800  | 1900  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 1080  | 555   | 586   | 202   | 163   | 2955  | 2211  | 737   |
| d1, Uniform Delay [s]                   | 31.88 | 31.89 | 31.34 | 45.77 | 44.69 | 15.43 | 23.51 | 23.51 |
| k, delay calibration                    | 0.11  | 0.15  | 0.12  | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.48  | 3.80  | 2.41  | 1.09  | 9.18  | 0.56  | 0.88  | 2.62  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.81   | 0.81   | 0.77   | 0.36  | 0.81   | 0.48   | 0.52   | 0.52   |
| d, Delay for Lane Group [s/veh]       | 33.36  | 35.69  | 33.75  | 46.85 | 53.87  | 15.99  | 24.39  | 26.13  |
| Lane Group LOS                        | C      | D      | C      | D     | D      | B      | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes   | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 9.70   | 10.35  | 9.99   | 0.90  | 3.61   | 6.71   | 6.97   | 7.32   |
| 50th-Percentile Queue Length [ft/ln]  | 242.58 | 258.87 | 249.82 | 22.58 | 90.18  | 167.80 | 174.18 | 183.09 |
| 95th-Percentile Queue Length [veh/ln] | 14.81  | 15.63  | 15.18  | 1.63  | 6.49   | 10.96  | 11.30  | 11.76  |
| 95th-Percentile Queue Length [ft/ln]  | 370.29 | 390.81 | 379.43 | 40.64 | 162.33 | 274.02 | 282.40 | 294.05 |

**Movement, Approach, & Intersection Results**

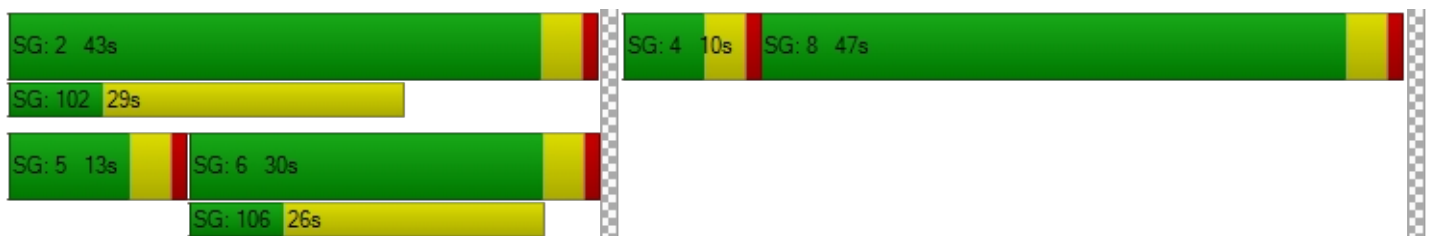
|                                 |       |       |       |       |      |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 33.36 | 35.69 | 34.67 | 0.00  | 0.00 | 46.85 | 53.87 | 15.99 | 0.00 | 0.00  | 24.81 | 26.13 |
| Movement LOS                    | C     | D     | C     |       |      | D     | D     | B     |      |       | C     | C     |
| d_A, Approach Delay [s/veh]     | 34.05 |       |       | 46.85 |      |       | 19.23 |       |      | 24.82 |       |       |
| Approach LOS                    | C     |       |       | D     |      |       | B     |       |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 26.71 |       |       |       |      |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |      |       |       |       |      |       |       |       |
| Intersection V/C                | 0.618 |       |       |       |      |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 39.64 | 39.64 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.650 | 2.033 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 859   | 120   | 779   | 520   |
| d_b, Bicycle Delay [s]                                   | 16.27 | 44.22 | 18.63 | 27.41 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.478 | 1.560 | 2.409 | 2.193 |
| Bicycle LOS  | E     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.758 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                 |        |        | No                 |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   | 140                | 198    | 68     | 142                | 314    | 139    | 142              | 1758   | 95     | 88               | 1505   | 80     |
| Base Volume Input [veh/h]                   | 140                | 198    | 68     | 142                | 314    | 139    | 142              | 1758   | 95     | 88               | 1505   | 80     |
| Base Volume Adjustment Factor               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 140                | 198    | 68     | 142                | 314    | 139    | 142              | 1758   | 95     | 88               | 1505   | 80     |
| Peak Hour Factor                            | 0.8870             | 0.8870 | 0.8870 | 0.9320             | 0.9320 | 0.9320 | 0.9120           | 0.9120 | 0.9120 | 0.9620           | 0.9620 | 0.9620 |
| Other Adjustment Factor                     | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 39                 | 56     | 19     | 38                 | 84     | 37     | 39               | 482    | 26     | 23               | 391    | 21     |
| Total Analysis Volume [veh/h]               | 158                | 223    | 77     | 152                | 337    | 149    | 156              | 1928   | 104    | 91               | 1564   | 83     |
| Presence of On-Street Parking               | No                 |        | No     | No                 |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 11       | 40      | 0       | 14       | 40      | 0       | 10       | 36      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 29      | 0       | 0        | 26      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 20    | 20    | 6     | 20    | 20    | 10    | 52    | 52    | 6     | 48    | 48    |
| g / C, Green / Cycle                    | 0.06  | 0.20  | 0.20  | 0.06  | 0.20  | 0.20  | 0.10  | 0.52  | 0.52  | 0.06  | 0.48  | 0.48  |
| (v / s)_i Volume / Saturation Flow Rate | 0.05  | 0.08  | 0.08  | 0.04  | 0.18  | 0.08  | 0.09  | 0.35  | 0.36  | 0.05  | 0.21  | 0.23  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  | 1800  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 213   | 383   | 383   | 220   | 387   | 387   | 181   | 1957  | 978   | 110   | 2708  | 903   |
| d1, Uniform Delay [s]                   | 46.25 | 34.76 | 34.57 | 45.96 | 38.61 | 34.46 | 44.34 | 18.21 | 18.51 | 46.51 | 17.53 | 17.85 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.03  | 0.69  | 0.62  | 3.83  | 6.15  | 0.63  | 11.28 | 1.98  | 4.28  | 14.62 | 0.54  | 1.81  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |       |        |        |        |        |        |        |        |        |
|---------------------------------------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.74  | 0.40   | 0.38   | 0.69  | 0.87   | 0.39   | 0.86   | 0.69   | 0.71   | 0.83   | 0.45   | 0.48   |
| d, Delay for Lane Group [s/veh]       | 51.28 | 35.45  | 35.18  | 49.79 | 44.76  | 35.09  | 55.62  | 20.18  | 22.79  | 61.14  | 18.07  | 19.66  |
| Lane Group LOS                        | D     | D      | D      | D     | D      | D      | E      | C      | C      | E      | B      | B      |
| Critical Lane Group                   | Yes   | No     | No     | No    | Yes    | No     | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.07  | 3.33   | 3.10   | 1.96  | 8.55   | 3.18   | 4.35   | 11.49  | 12.63  | 2.67   | 6.15   | 6.98   |
| 50th-Percentile Queue Length [ft/ln]  | 51.77 | 83.29  | 77.53  | 48.96 | 213.82 | 79.55  | 108.66 | 287.29 | 315.78 | 66.79  | 153.70 | 174.43 |
| 95th-Percentile Queue Length [veh/ln] | 3.73  | 6.00   | 5.58   | 3.53  | 13.35  | 5.73   | 7.77   | 17.05  | 18.46  | 4.81   | 10.21  | 11.31  |
| 95th-Percentile Queue Length [ft/ln]  | 93.19 | 149.91 | 139.55 | 88.13 | 333.72 | 143.20 | 194.14 | 426.28 | 461.50 | 120.23 | 255.36 | 282.73 |

**Movement, Approach, & Intersection Results**

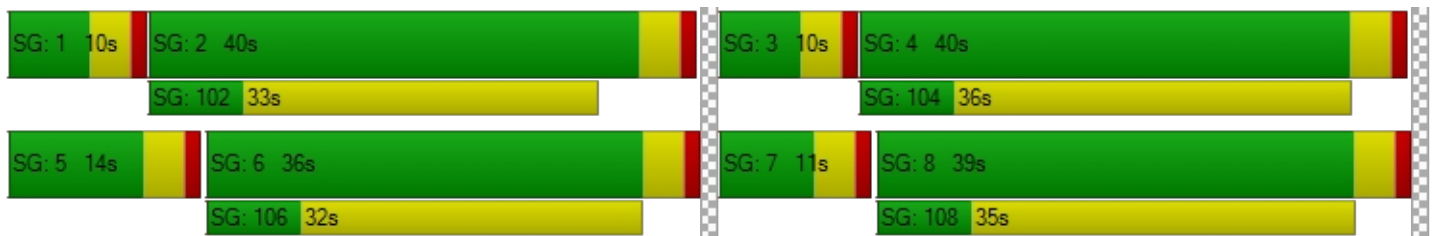
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 51.28 | 35.37 | 35.18 | 49.79 | 44.76 | 35.09 | 55.62 | 20.98 | 22.79 | 61.14 | 18.42 | 19.66 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | E     | C     | C     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 40.83 |       |       | 43.70 |       |       | 23.53 |       |       | 20.72 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 26.70 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.758 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 39.64 | 39.64 | 39.64 | 39.64 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.498 | 2.636 | 3.225 | 3.205 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 700   | 719   | 719   | 640   |
| d_b, Bicycle Delay [s]                                   | 21.16 | 20.51 | 20.51 | 23.15 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.937 | 2.612 | 2.763 | 2.277 |
| Bicycle LOS  | A     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.656 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No               |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name  | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 163              | 11     | 138    | 24              | 27     | 13     | 12               | 1721   | 339    | 167              | 1377   | 31     |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 163              | 11     | 138    | 24              | 27     | 13     | 12               | 1721   | 339    | 167              | 1377   | 31     |
| Peak Hour Factor                            | 0.8320           | 0.8320 | 0.8320 | 0.6740          | 0.6740 | 0.6740 | 0.9510           | 0.9510 | 0.9510 | 0.8930           | 0.8930 | 0.8930 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 49               | 3      | 41     | 9               | 10     | 5      | 3                | 452    | 89     | 47               | 385    | 9      |
| Total Analysis Volume [veh/h]               | 196              | 13     | 166    | 36              | 40     | 19     | 13               | 1810   | 356    | 187              | 1542   | 35     |
| Presence of On-Street Parking               | No               |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 26    | 0     | 0     | 10    | 0     | 10       | 32      | 0       | 22       | 44      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0        | 21      | 0       | 0        | 14      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | R     | L     | C    | C    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 10    | 10    | 10    | 5     | 5     | 2     | 47    | 47    | 11    | 56   | 56   |
| g / C, Green / Cycle                    | 0.12  | 0.12  | 0.12  | 0.06  | 0.06  | 0.02  | 0.52  | 0.52  | 0.13  | 0.63 | 0.63 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06  | 0.06  | 0.09  | 0.02  | 0.03  | 0.01  | 0.32  | 0.19  | 0.10  | 0.27 | 0.28 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 1800  | 1900  | 1800  | 5700  | 1900  | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 209   | 209   | 221   | 111   | 117   | 36    | 2956  | 985   | 227   | 2374 | 1187 |
| d1, Uniform Delay [s]                   | 37.38 | 37.39 | 38.59 | 40.52 | 40.98 | 43.63 | 15.32 | 12.86 | 38.42 | 8.73 | 8.86 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.83  | 1.85  | 5.10  | 1.68  | 3.33  | 6.05  | 0.96  | 1.03  | 7.30  | 0.59 | 1.26 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.50   | 0.50   | 0.75   | 0.32  | 0.50  | 0.36  | 0.61   | 0.36   | 0.82   | 0.44   | 0.45   |
| d, Delay for Lane Group [s/veh]       | 39.21  | 39.24  | 43.68  | 42.19 | 44.31 | 49.68 | 16.27  | 13.89  | 45.72  | 9.32   | 10.12  |
| Lane Group LOS                        | D      | D      | D      | D     | D     | D     | B      | B      | D      | A      | B      |
| Critical Lane Group                   | No     | No     | Yes    | No    | Yes   | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.23   | 2.25   | 3.81   | 0.81  | 1.36  | 0.34  | 8.33   | 4.28   | 4.43   | 4.81   | 5.28   |
| 50th-Percentile Queue Length [ft/ln]  | 55.86  | 56.21  | 95.31  | 20.22 | 34.08 | 8.60  | 208.37 | 107.06 | 110.63 | 120.30 | 132.10 |
| 95th-Percentile Queue Length [veh/ln] | 4.02   | 4.05   | 6.86   | 1.46  | 2.45  | 0.62  | 13.07  | 7.68   | 7.87   | 8.41   | 9.05   |
| 95th-Percentile Queue Length [ft/ln]  | 100.55 | 101.18 | 171.55 | 36.40 | 61.35 | 15.47 | 326.74 | 191.90 | 196.87 | 210.24 | 226.35 |

**Movement, Approach, & Intersection Results**

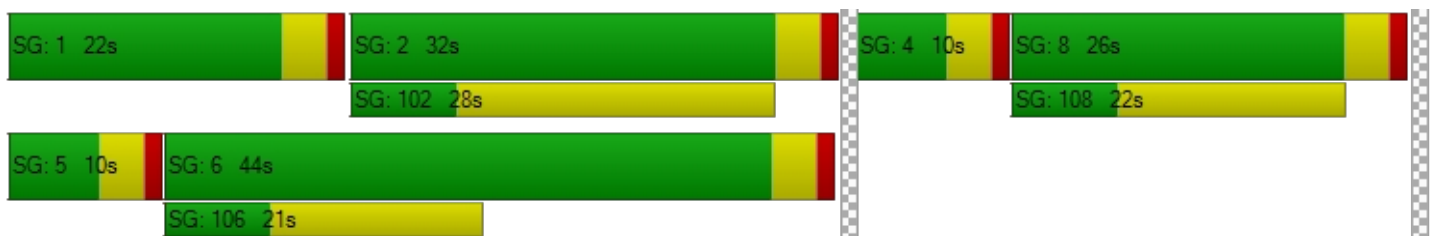
|                                 |       |       |       |       |       |       |       |       |       |       |      |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| d_M, Delay for Movement [s/veh] | 39.23 | 39.24 | 43.68 | 42.19 | 44.31 | 44.31 | 49.68 | 16.27 | 13.89 | 45.72 | 9.58 | 10.12 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | B     | B     | D     | A    | B     |
| d_A, Approach Delay [s/veh]     | 41.20 |       |       | 43.51 |       |       | 16.08 |       | 13.42 |       |      |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       | B     |       |      |       |
| d_I, Intersection Delay [s/veh] | 17.74 |       |       |       |       |       |       |       |       |       |      |       |
| Intersection LOS                | B     |       |       |       |       |       |       |       |       |       |      |       |
| Intersection V/C                | 0.656 |       |       |       |       |       |       |       |       |       |      |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.72 | 34.72 | 0.00  | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.364 | 1.990 | 0.000 | 3.119 |
| Crosswalk LOS  | B     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 488   | 133   | 622   | 888   |
| d_b, Bicycle Delay [s]                                   | 25.73 | 39.24 | 21.40 | 13.92 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.178 | 1.716 | 2.758 | 2.530 |
| Bicycle LOS  | B     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 27.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.637 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O T             |        |        | T O T             |        |        | T O T            |        |        | T O T            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                   |        |        |                   |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 163               | 231    | 81     | 308               | 608    | 105    | 128              | 1187   | 227    | 67               | 982    | 84     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 163               | 231    | 81     | 308               | 608    | 105    | 128              | 1187   | 227    | 67               | 982    | 84     |
| Peak Hour Factor                            | 0.8020            | 0.8020 | 0.8020 | 0.9340            | 0.9340 | 0.9340 | 0.8920           | 0.8920 | 0.8920 | 0.9780           | 0.9780 | 0.9780 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 51                | 72     | 25     | 82                | 163    | 28     | 36               | 333    | 64     | 17               | 251    | 21     |
| Total Analysis Volume [veh/h]               | 203               | 288    | 101    | 330               | 651    | 112    | 143              | 1331   | 254    | 69               | 1004   | 86     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 11       | 30      | 0       | 16       | 35      | 0       | 10       | 38      | 0       | 11       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 19      | 0       | 0        | 19      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 7     | 15    | 15    | 11    | 19    | 19    | 6     | 48    | 48    | 5     | 47    | 47    |
| g / C, Green / Cycle                    | 0.07  | 0.16  | 0.16  | 0.12  | 0.20  | 0.20  | 0.06  | 0.50  | 0.50  | 0.05  | 0.49  | 0.49  |
| (v / s)_i Volume / Saturation Flow Rate | 0.06  | 0.11  | 0.10  | 0.09  | 0.17  | 0.06  | 0.04  | 0.28  | 0.27  | 0.02  | 0.19  | 0.19  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 261   | 310   | 310   | 405   | 777   | 388   | 219   | 1896  | 948   | 189   | 1863  | 932   |
| d1, Uniform Delay [s]                   | 43.26 | 37.28 | 36.95 | 41.08 | 36.34 | 32.00 | 43.59 | 16.62 | 16.42 | 43.43 | 15.27 | 15.31 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.99  | 2.31  | 1.88  | 4.03  | 2.50  | 0.41  | 3.26  | 1.22  | 2.26  | 1.17  | 0.61  | 1.24  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |       |       |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|-------|-------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.78   | 0.65   | 0.60   | 0.81   | 0.84   | 0.29  | 0.65  | 0.56   | 0.55   | 0.36  | 0.39   | 0.39   |
| d, Delay for Lane Group [s/veh]       | 48.25  | 39.59  | 38.83  | 45.11  | 38.84  | 32.41 | 46.84 | 17.84  | 18.68  | 44.60 | 15.89  | 16.55  |
| Lane Group LOS                        | D      | D      | D      | D      | D      | C     | D     | B      | B      | D     | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No    | No    | Yes    | No     | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.50   | 4.54   | 4.15   | 3.96   | 7.39   | 2.20  | 1.73  | 7.98   | 7.93   | 0.81  | 4.88   | 5.10   |
| 50th-Percentile Queue Length [ft/ln]  | 62.62  | 113.62 | 103.70 | 98.96  | 184.85 | 55.06 | 43.26 | 199.55 | 198.32 | 20.23 | 121.95 | 127.53 |
| 95th-Percentile Queue Length [veh/ln] | 4.51   | 8.04   | 7.47   | 7.13   | 11.85  | 3.96  | 3.12  | 12.62  | 12.55  | 1.46  | 8.50   | 8.81   |
| 95th-Percentile Queue Length [ft/ln]  | 112.72 | 201.03 | 186.67 | 178.13 | 296.34 | 99.10 | 77.88 | 315.39 | 313.80 | 36.41 | 212.50 | 220.14 |

**Movement, Approach, & Intersection Results**

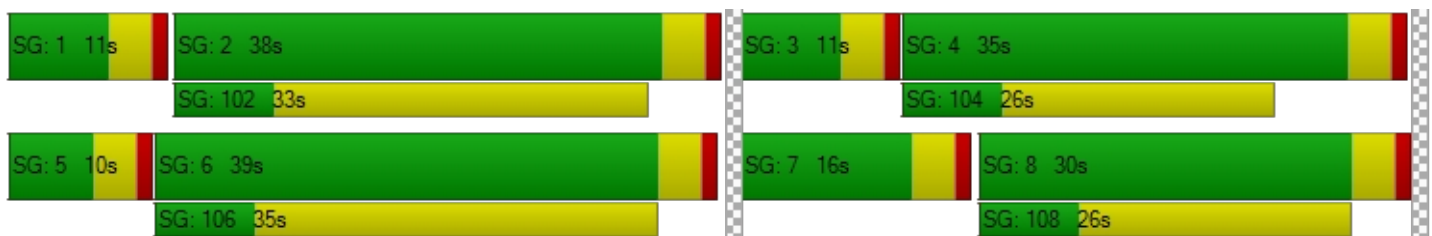
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 48.25 | 39.36 | 38.83 | 45.11 | 38.84 | 32.41 | 46.84 | 18.00 | 18.68 | 44.60 | 16.07 | 16.55 |
| Movement LOS                    | D     | D     | D     | D     | D     | C     | D     | B     | B     | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 42.32 |       |       | 40.08 |       |       | 20.49 |       |       | 17.81 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | B     |       |       |
| d_I, Intersection Delay [s/veh] | 27.32 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.637 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.18 | 37.18 | 37.18 | 37.18 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.710 | 2.820 | 3.099 | 3.084 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 547   | 652   | 715   | 736   |
| d_b, Bicycle Delay [s]                                   | 25.09 | 21.59 | 19.62 | 18.98 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.048 | 2.461 | 2.510 | 2.197 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 27.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.564 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Symbol]        |        |        | [Symbol]        |        |        | [Symbol]         |        |        | [Symbol]         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |



**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                 |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 121             | 167    | 113    | 255             | 254    | 184    | 179              | 909    | 84     | 111              | 1424   | 134    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 121             | 167    | 113    | 255             | 254    | 184    | 179              | 909    | 84     | 111              | 1424   | 134    |
| Peak Hour Factor                            | 0.8310          | 0.8310 | 0.8310 | 0.9010          | 0.9010 | 0.9010 | 0.8870           | 0.8870 | 0.8870 | 0.9070           | 0.9070 | 0.9070 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 36              | 50     | 34     | 71              | 70     | 51     | 50               | 256    | 24     | 31               | 393    | 37     |
| Total Analysis Volume [veh/h]               | 146             | 201    | 136    | 283             | 282    | 204    | 202              | 1025   | 95     | 122              | 1570   | 148    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 12       | 46      | 0       | 17       | 51      | 0       | 13       | 39      | 0       | 13       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 35      | 0       | 0        | 37      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115  | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 7     | 11    | 11    | 11    | 15    | 15    | 9     | 71    | 71   | 6     | 68    | 68    |
| g / C, Green / Cycle                    | 0.06  | 0.09  | 0.09  | 0.10  | 0.13  | 0.13  | 0.07  | 0.62  | 0.62 | 0.05  | 0.59  | 0.59  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.05  | 0.07  | 0.08  | 0.07  | 0.11  | 0.06  | 0.18  | 0.05 | 0.03  | 0.28  | 0.08  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 5700  | 1900 | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 206   | 359   | 179   | 346   | 510   | 255   | 262   | 3510  | 1170 | 182   | 3380  | 1127  |
| d1, Uniform Delay [s]                   | 53.18 | 49.83 | 50.83 | 50.85 | 46.59 | 48.32 | 52.26 | 10.35 | 8.94 | 53.58 | 13.16 | 10.34 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.41  | 1.37  | 6.42  | 4.81  | 0.94  | 5.74  | 4.77  | 0.21  | 0.14 | 4.22  | 0.46  | 0.24  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |        |        |        |        |        |       |       |        |       |
|---------------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|-------|
| X, volume / capacity                  | 0.71  | 0.56   | 0.76   | 0.82   | 0.55   | 0.80   | 0.77   | 0.29   | 0.08  | 0.67  | 0.46   | 0.13  |
| d, Delay for Lane Group [s/veh]       | 57.59 | 51.20  | 57.25  | 55.66  | 47.53  | 54.06  | 57.03  | 10.57  | 9.08  | 57.80 | 13.62  | 10.58 |
| Lane Group LOS                        | E     | D      | E      | E      | D      | D      | E      | B      | A     | E     | B      | B     |
| Critical Lane Group                   | No    | No     | Yes    | Yes    | No     | No     | Yes    | No     | No    | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 2.20  | 2.83   | 4.14   | 4.22   | 3.84   | 6.07   | 3.03   | 3.97   | 0.98  | 1.84  | 7.44   | 1.70  |
| 50th-Percentile Queue Length [ft/ln]  | 54.96 | 70.85  | 103.45 | 105.55 | 96.05  | 151.80 | 75.86  | 99.23  | 24.51 | 46.00 | 185.92 | 42.40 |
| 95th-Percentile Queue Length [veh/ln] | 3.96  | 5.10   | 7.45   | 7.59   | 6.92   | 10.11  | 5.46   | 7.14   | 1.76  | 3.31  | 11.91  | 3.05  |
| 95th-Percentile Queue Length [ft/ln]  | 98.93 | 127.53 | 186.20 | 189.79 | 172.89 | 252.83 | 136.54 | 178.62 | 44.12 | 82.79 | 297.72 | 76.32 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 57.59 | 51.20 | 57.25 | 55.66 | 47.53 | 54.06 | 57.03 | 10.57 | 9.08 | 57.80 | 13.62 | 10.58 |
| Movement LOS                    | E     | D     | E     | E     | D     | D     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 54.83 |       |       | 52.25 |       |       | 17.56 |       |      | 16.30 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 27.16 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.564 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.742 | 2.790 | 3.212 | 3.217 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 730   | 817   | 608   | 608   |
| d_b, Bicycle Delay [s]                                   | 23.19 | 20.12 | 27.84 | 27.84 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.958 | 2.194 | 2.287 | 2.572 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 205.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.751 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T      |        |        | T T T      |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |            |        |        |            |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 234        | 181    | 133    | 775        | 444    | 20     | 33               | 1106   | 218    | 246              | 1295   | 501    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 234        | 181    | 133    | 775        | 444    | 20     | 33               | 1106   | 218    | 246              | 1295   | 501    |
| Peak Hour Factor                            | 0.8160     | 0.8160 | 0.8160 | 0.9420     | 0.9420 | 0.9420 | 0.9230           | 0.9230 | 0.9230 | 0.9300           | 0.9300 | 0.9300 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 72         | 55     | 41     | 206        | 118    | 5      | 9                | 300    | 59     | 66               | 348    | 135    |
| Total Analysis Volume [veh/h]               | 287        | 222    | 163    | 823        | 471    | 21     | 36               | 1198   | 236    | 265              | 1392   | 539    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 16       | 53      | 0       | 12       | 49      | 0       | 11       | 45      | 0       | 10       | 44      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 42      | 0       | 0        | 36      | 0       | 0        | 34      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L       | C     | R     | L     | C     | C     | L      | C     | R     |
|---|-------|-------|-------|---------|-------|-------|-------|-------|-------|--------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120     | 120   | 120   | 120   | 120   | 120   | 120    | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00    | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00    | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 12    | 21    | 21    | 8       | 18    | 18    | 4     | 69    | 69    | 6      | 70    | 70    |
| g / C, Green / Cycle                    | 0.10  | 0.18  | 0.18  | 0.07    | 0.15  | 0.15  | 0.04  | 0.57  | 0.57  | 0.05   | 0.59  | 0.59  |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.06  | 0.09  | 0.24    | 0.12  | 0.01  | 0.02  | 0.25  | 0.25  | 0.08   | 0.24  | 0.28  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500    | 3800  | 1900  | 1800  | 3800  | 1900  | 3500   | 5700  | 1900  |
| c, Capacity [veh/h]                     | 343   | 675   | 337   | 236     | 558   | 279   | 64    | 2170  | 1085  | 178    | 3340  | 1113  |
| d1, Uniform Delay [s]                   | 53.20 | 43.12 | 44.41 | 55.99   | 49.87 | 44.18 | 56.95 | 14.82 | 14.64 | 56.98  | 13.62 | 14.37 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11   | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.40  | 0.28  | 1.07  | 1123.47 | 3.58  | 0.11  | 7.35  | 0.67  | 1.25  | 227.75 | 0.38  | 1.51  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.33   | 0.48   | 3.49    | 0.84   | 0.08  | 0.56  | 0.45   | 0.43   | 1.49   | 0.42   | 0.48   |
| d, Delay for Lane Group [s/veh]       | 58.59  | 43.40  | 45.49  | 1179.46 | 53.46  | 44.29 | 64.29 | 15.48  | 15.89  | 284.73 | 14.00  | 15.87  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D     | E     | B      | B      | F      | B      | B      |
| Critical Lane Group                   | No     | No     | Yes    | Yes     | No     | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.51   | 2.92   | 4.48   | 40.35   | 7.15   | 0.55  | 1.21  | 7.59   | 7.42   | 8.31   | 6.81   | 8.66   |
| 50th-Percentile Queue Length [ft/ln]  | 112.71 | 72.98  | 111.90 | 1008.68 | 178.76 | 13.79 | 30.18 | 189.85 | 185.48 | 207.80 | 170.15 | 216.56 |
| 95th-Percentile Queue Length [veh/ln] | 7.99   | 5.25   | 7.95   | 61.86   | 11.54  | 0.99  | 2.17  | 12.11  | 11.89  | 14.35  | 11.08  | 13.49  |
| 95th-Percentile Queue Length [ft/ln]  | 199.77 | 131.37 | 198.64 | 1546.51 | 288.40 | 24.83 | 54.32 | 302.83 | 297.15 | 358.79 | 277.11 | 337.23 |



**Movement, Approach, & Intersection Results**

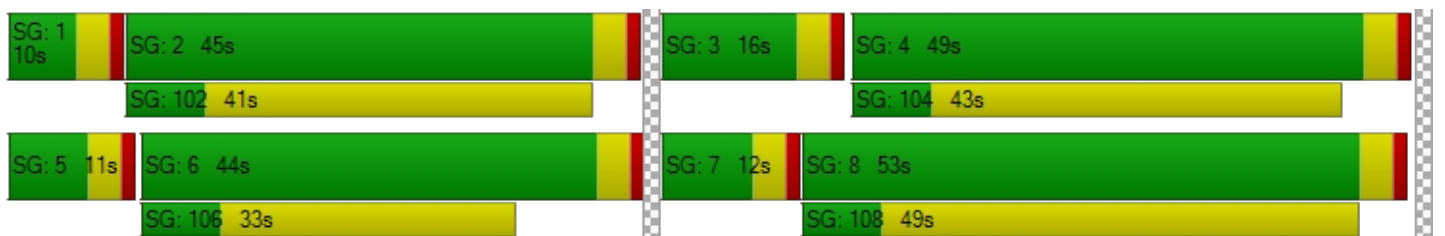
|                                 |        |       |       |         |       |       |       |       |       |        |       |       |
|---------------------------------|--------|-------|-------|---------|-------|-------|-------|-------|-------|--------|-------|-------|
| d_M, Delay for Movement [s/veh] | 58.59  | 43.40 | 45.49 | 1179.46 | 53.46 | 44.29 | 64.29 | 15.56 | 15.89 | 284.73 | 14.00 | 15.87 |
| Movement LOS                    | E      | D     | D     | F       | D     | D     | E     | B     | B     | F      | B     | B     |
| d_A, Approach Delay [s/veh]     | 50.40  |       |       | 758.02  |       |       | 16.81 |       |       | 47.13  |       |       |
| Approach LOS                    | D      |       |       | F       |       |       | B     |       |       | D      |       |       |
| d_I, Intersection Delay [s/veh] | 205.00 |       |       |         |       |       |       |       |       |        |       |       |
| Intersection LOS                | F      |       |       |         |       |       |       |       |       |        |       |       |
| Intersection V/C                | 0.751  |       |       |         |       |       |       |       |       |        |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.837 | 2.902 | 3.049 | 3.338 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 816   | 750   | 683   | 666   |
| d_b, Bicycle Delay [s]                                   | 21.02 | 23.45 | 26.02 | 26.68 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.114 | 2.644 | 2.368 | 2.767 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 34.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.722 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                         |        |        |                         |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 294                     | 558    | 242    | 529                     | 359    | 14     | 37           | 1108   | 238    | 303          | 979    | 666    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 294                     | 558    | 242    | 529                     | 359    | 14     | 37           | 1108   | 238    | 303          | 979    | 666    |
| Peak Hour Factor                            | 0.9470                  | 0.9470 | 0.9470 | 0.9220                  | 0.9220 | 0.9220 | 0.8360       | 0.8360 | 0.8360 | 0.9740       | 0.9740 | 0.9740 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 78                      | 147    | 64     | 143                     | 97     | 4      | 11           | 331    | 71     | 78           | 251    | 171    |
| Total Analysis Volume [veh/h]               | 310                     | 589    | 256    | 574                     | 389    | 15     | 44           | 1325   | 285    | 311          | 1005   | 684    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| Bicycle Volume [bicycles/h]                 |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 16       | 33      | 0       | 27       | 44      | 0       | 10       | 39      | 0       | 16       | 45      | 45      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 0       | 0       | 0        | 33      | 0       | 0        | 28      | 0       | 0        | 22      | 22      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C     | C     | L     | C     | C     | L     | C     | R    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 |
| g_i, Effective Green Time [s]           | 12    | 21    | 21    | 21    | 23    | 32    | 32    | 5     | 43    | 43    | 12    | 50    | 77   |
| g / C, Green / Cycle                    | 0.10  | 0.18  | 0.18  | 0.18  | 0.20  | 0.28  | 0.28  | 0.04  | 0.37  | 0.37  | 0.10  | 0.44  | 0.67 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.16  | 0.16  | 0.13  | 0.16  | 0.11  | 0.11  | 0.01  | 0.21  | 0.21  | 0.09  | 0.18  | 0.36 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 5700  | 1900  | 3500  | 5700  | 1900 |
| c, Capacity [veh/h]                     | 367   | 348   | 348   | 348   | 700   | 529   | 529   | 141   | 2125  | 708   | 367   | 2493  | 1277 |
| d1, Uniform Delay [s]                   | 50.58 | 45.47 | 45.46 | 44.28 | 44.04 | 33.55 | 33.49 | 53.67 | 28.76 | 28.61 | 50.60 | 22.12 | 9.66 |
| k, delay calibration                    | 0.11  | 0.16  | 0.15  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               | 5.34  | 8.17  | 8.06  | 2.90  | 2.45  | 0.46  | 0.45  | 1.24  | 1.12  | 3.18  | 5.44  | 0.49  | 1.61 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |        |        |        |       |        |        |        |        |        |
|---------------------------------------|-------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.84  | 0.85  | 0.85  | 0.73  | 0.82   | 0.38   | 0.38   | 0.31  | 0.57   | 0.56   | 0.85   | 0.40   | 0.54   |
| d, Delay for Lane Group [s/veh]       | 55.93 | 53.64 | 53.52 | 47.19 | 46.49  | 34.00  | 33.94  | 54.92 | 29.89  | 31.79  | 56.04  | 22.61  | 11.28  |
| Lane Group LOS                        | E     | D     | D     | D     | D      | C      | C      | D     | C      | C      | E      | C      | B      |
| Critical Lane Group                   | No    | Yes   | No    | No    | Yes    | No     | No     | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.65  | 8.94  | 8.91  | 7.06  | 8.02   | 4.66   | 4.59   | 0.64  | 9.03   | 9.21   | 4.67   | 6.24   | 8.67   |
| 50th-Percentile Queue Length [ft/ln]  | 116.2 | 223.4 | 222.8 | 176.5 | 200.60 | 116.50 | 114.80 | 16.09 | 225.84 | 230.34 | 116.71 | 156.11 | 216.65 |
| 95th-Percentile Queue Length [veh/ln] | 8.18  | 13.84 | 13.81 | 11.42 | 12.67  | 8.20   | 8.11   | 1.16  | 13.96  | 14.19  | 8.21   | 10.34  | 13.49  |
| 95th-Percentile Queue Length [ft/ln]  | 204.5 | 346.0 | 345.2 | 285.4 | 316.74 | 205.01 | 202.66 | 28.97 | 349.07 | 354.79 | 205.30 | 258.56 | 337.34 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 55.93 | 53.58 | 47.19 | 46.49 | 33.97 | 33.94 | 54.92 | 30.05 | 31.79 | 56.04 | 22.61 | 11.28 |
| Movement LOS                    | E     | D     | D     | D     | C     | C     | D     | C     | C     | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 52.81 |       |       | 41.32 |       |       | 31.01 |       |       | 23.93 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 34.66 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.722 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.904 | 2.838 | 3.184 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 504   | 695   | 608   | 713   |
| d_b, Bicycle Delay [s]                                   | 32.18 | 24.47 | 27.84 | 23.83 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.512 | 2.366 | 2.242 | 2.660 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 19.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.642 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐            |        |        | ⇐            |        |        | ⇐            |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1              | 0      | 1      | 0            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 |                |        |        | No             |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name  | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 0              | 0      | 0      | 430            | 0      | 675    | 0            | 1079   | 724    | 219          | 1562   | 0      |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0              | 0      | 0      | 430            | 0      | 675    | 0            | 1079   | 724    | 219          | 1562   | 0      |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 0.9480         | 1.0000 | 0.9480 | 1.0000       | 0.8820 | 0.8820 | 0.9530       | 0.9530 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0              | 0      | 0      | 113            | 0      | 178    | 0            | 306    | 205    | 57           | 410    | 0      |
| Total Analysis Volume [veh/h]               | 0              | 0      | 0      | 454            | 0      | 712    | 0            | 1223   | 821    | 230          | 1639   | 0      |
| Presence of On-Street Parking               |                |        |        | No             |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 45    | 0       | 0     | 0       | 33      | 0       | 12       | 45      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 12      | 0       | 0        | 14      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              |  | L     | C     | R     | C     | C     | R     | L     | C    |
|---|--|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     |  | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90   |
| L, Total Lost Time per Cycle [s]        |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 |
| g_i, Effective Green Time [s]           |  | 24    | 24    | 24    | 46    | 46    | 46    | 8     | 58   |
| g / C, Green / Cycle                    |  | 0.27  | 0.27  | 0.27  | 0.51  | 0.51  | 0.51  | 0.09  | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.22  | 0.22  | 0.20  | 0.27  | 0.27  | 0.27  | 0.07  | 0.29 |
| s, saturation flow rate [veh/h]         |  | 1750  | 1750  | 1900  | 3800  | 1900  | 1900  | 3500  | 5700 |
| c, Capacity [veh/h]                     |  | 470   | 470   | 510   | 1943  | 971   | 971   | 305   | 3664 |
| d1, Uniform Delay [s]                   |  | 30.98 | 30.98 | 30.30 | 14.71 | 14.71 | 14.71 | 40.16 | 8.06 |
| k, delay calibration                    |  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  | 0.11  | 0.50 |
| l, Upstream Filtering Factor            |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               |  | 3.79  | 3.79  | 2.39  | 1.02  | 2.04  | 2.04  | 3.78  | 0.40 |
| d3, Initial Queue Delay [s]             |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |  |        |        |        |        |        |        |        |        |
|---------------------------------------|--|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  |  | 0.83   | 0.83   | 0.76   | 0.53   | 0.53   | 0.53   | 0.75   | 0.45   |
| d, Delay for Lane Group [s/veh]       |  | 34.78  | 34.78  | 32.69  | 15.73  | 16.75  | 16.75  | 43.94  | 8.46   |
| Lane Group LOS                        |  | C      | C      | C      | B      | B      | B      | D      | A      |
| Critical Lane Group                   |  | Yes    | No     | No     | Yes    | No     | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] |  | 8.20   | 8.20   | 7.87   | 6.79   | 7.07   | 7.07   | 2.62   | 4.77   |
| 50th-Percentile Queue Length [ft/ln]  |  | 204.93 | 204.93 | 196.79 | 169.85 | 176.68 | 176.68 | 65.41  | 119.24 |
| 95th-Percentile Queue Length [veh/ln] |  | 12.89  | 12.89  | 12.47  | 11.07  | 11.43  | 11.43  | 4.71   | 8.35   |
| 95th-Percentile Queue Length [ft/ln]  |  | 322.32 | 322.32 | 311.82 | 276.71 | 285.68 | 285.68 | 117.73 | 208.78 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |       |       |       |       |      |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|-------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 34.78 | 0.00 | 33.64 | 0.00  | 15.73 | 16.75 | 43.94 | 8.46 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | B     | B     | D     | A    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 34.08 |      |       | 16.24 |       |       | 12.83 |      |      |
| Approach LOS                    | A     |      |      | C     |      |       | B     |       |       | B     |      |      |
| d_I, Intersection Delay [s/veh] | 19.08 |      |      |       |      |       |       |       |       |       |      |      |
| Intersection LOS                | B     |      |      |       |      |       |       |       |       |       |      |      |
| Intersection V/C                | 0.642 |      |      |       |      |       |       |       |       |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.227 | 2.319 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 911   | 644   | 911   |
| d_b, Bicycle Delay [s]                                   | 45.01 | 13.35 | 20.68 | 13.35 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 3.484 | 2.684 | 2.588 |
| Bicycle LOS  | D     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.797 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐            |        |        |                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 0      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No             |        |        |                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes            |        |        | Yes            |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 618            | 0      | 253    | 0              | 0      | 0      | 343          | 1365   | 0      | 0            | 992    | 497    |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 618            | 0      | 253    | 0              | 0      | 0      | 343          | 1365   | 0      | 0            | 992    | 497    |
| Peak Hour Factor                            | 0.8400         | 1.0000 | 0.8400 | 1.0000         | 1.0000 | 1.0000 | 0.8440       | 0.8440 | 1.0000 | 1.0000       | 0.5300 | 0.5300 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 184            | 0      | 75     | 0              | 0      | 0      | 102          | 404    | 0      | 0            | 468    | 234    |
| Total Analysis Volume [veh/h]               | 736            | 0      | 301    | 0              | 0      | 0      | 406          | 1617   | 0      | 0            | 1872   | 938    |
| Presence of On-Street Parking               | No             |        | No     |                |        |        | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|-------|---------|-------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| Signal Group                 | 3     | 0       | 0     | 0       | 0       | 0       | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |         |       |         |         |         |          |         |         |         |         |         |
| Lead / Lag                   | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 6     | 0       | 0     | 0       | 0       | 0       | 6        | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 30    | 0       | 0     | 0       | 0       | 0       | 30       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 52    | 0       | 0     | 0       | 0       | 0       | 22       | 43      | 0       | 0       | 21      | 0       |
| Vehicle Extension [s]        | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 7     | 0       | 0     | 0       | 0       | 0       | 0        | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 14    | 0       | 0     | 0       | 0       | 0       | 0        | 16      | 0       | 0       | 10      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 | No    |         |       |         |         |         |          | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               | No    |         |       |         |         |         | No       | No      |         |         | No      |         |
| Maximum Recall               | No    |         |       |         |         |         | No       | No      |         |         | No      |         |
| Pedestrian Recall            | No    |         |       |         |         |         | No       | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | R     |  | L     | C    | C     | C     | R     |
|---|-------|-------|--|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 95    | 95    |  | 95    | 95   | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 24    | 24    |  | 13    | 63   | 45    | 45    | 45    |
| g / C, Green / Cycle                    | 0.25  | 0.25  |  | 0.14  | 0.66 | 0.48  | 0.48  | 0.48  |
| (v / s)_i Volume / Saturation Flow Rate | 0.21  | 0.16  |  | 0.12  | 0.28 | 0.37  | 0.37  | 0.37  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 3500  | 5700 | 3800  | 1900  | 1900  |
| c, Capacity [veh/h]                     | 891   | 484   |  | 492   | 3769 | 1818  | 909   | 909   |
| d1, Uniform Delay [s]                   | 33.42 | 31.36 |  | 39.69 | 7.62 | 20.51 | 20.51 | 20.51 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.11  | 0.50 | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 2.02  | 1.31  |  | 3.55  | 0.36 | 3.27  | 6.35  | 6.35  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |  |        |        |        |        |        |
|---------------------------------------|--------|--------|--|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.83   | 0.62   |  | 0.82   | 0.43   | 0.77   | 0.77   | 0.77   |
| d, Delay for Lane Group [s/veh]       | 35.44  | 32.68  |  | 43.23  | 7.97   | 23.78  | 26.86  | 26.86  |
| Lane Group LOS                        | D      | C      |  | D      | A      | C      | C      | C      |
| Critical Lane Group                   | Yes    | No     |  | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 8.07   | 6.18   |  | 4.79   | 4.68   | 12.95  | 13.73  | 13.73  |
| 50th-Percentile Queue Length [ft/ln]  | 201.83 | 154.53 |  | 119.74 | 117.07 | 323.69 | 343.14 | 343.14 |
| 95th-Percentile Queue Length [veh/ln] | 12.73  | 10.26  |  | 8.38   | 8.23   | 18.85  | 19.80  | 19.80  |
| 95th-Percentile Queue Length [ft/ln]  | 318.33 | 256.47 |  | 209.47 | 205.79 | 471.22 | 495.04 | 495.04 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |      |      |       |      |      |       |       |       |
|---------------------------------|-------|------|-------|------|------|------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 35.44 | 0.00 | 32.68 | 0.00 | 0.00 | 0.00 | 43.23 | 7.97 | 0.00 | 0.00  | 23.78 | 26.86 |
| Movement LOS                    | D     |      | C     |      |      |      | D     | A    |      |       | C     | C     |
| d_A, Approach Delay [s/veh]     | 34.64 |      |       | 0.00 |      |      | 15.05 |      |      | 25.32 |       |       |
| Approach LOS                    | C     |      |       | A    |      |      | B     |      |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 23.43 |      |       |      |      |      |       |      |      |       |       |       |
| Intersection LOS                | C     |      |       |      |      |      |       |      |      |       |       |       |
| Intersection V/C                | 0.797 |      |       |      |      |      |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.14 | 37.14 | 0.00  | 37.14 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.279 | 2.372 | 0.000 | 3.255 |
| Crosswalk LOS  | B     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1010  | 0     | 821   | 358   |
| d_b, Bicycle Delay [s]                                   | 11.63 | 47.51 | 16.51 | 32.03 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.560 | 4.132 | 2.672 | 3.105 |
| Bicycle LOS  | A     | D     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 14.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.525 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | +            |        |        | +            |        |        | +            |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No           |        |        | No           |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name  | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |              |        |        |              |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 109          | 0      | 26     | 95           | 0      | 372    | 159          | 1723   | 37     | 14           | 1354   | 42     |
| Base Volume Adjustment Factor               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 109          | 0      | 26     | 95           | 0      | 372    | 159          | 1723   | 37     | 14           | 1354   | 42     |
| Peak Hour Factor                            | 0.7120       | 0.7120 | 0.7120 | 0.7980       | 0.7980 | 0.7980 | 0.9780       | 0.9780 | 0.9780 | 0.9210       | 0.9210 | 0.9210 |
| Other Adjustment Factor                     | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 38           | 0      | 9      | 30           | 0      | 117    | 41           | 440    | 9      | 4            | 368    | 11     |
| Total Analysis Volume [veh/h]               | 153          | 0      | 37     | 119          | 0      | 466    | 163          | 1762   | 38     | 15           | 1470   | 46     |
| Presence of On-Street Parking               | No           |        | No     | No           |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 49      | 0       | 0       | 49      | 0       | 10       | 31      | 0       | 10       | 31      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 33      | 0       | 0       | 0       | 0       | 0        | 14      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90   | 90   | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 14    | 14    | 14    | 6     | 62   | 62   | 2     | 58   | 58   |
| g / C, Green / Cycle                    | 0.16  | 0.16  | 0.16  | 0.07  | 0.69 | 0.69 | 0.02  | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.11  | 0.07  | 0.12  | 0.05  | 0.31 | 0.32 | 0.01  | 0.26 | 0.27 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 3500  | 3800 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 355   | 363   | 597   | 236   | 2613 | 1306 | 40    | 2440 | 1220 |
| d1, Uniform Delay [s]                   | 35.77 | 34.26 | 36.46 | 41.06 | 6.38 | 6.50 | 43.42 | 7.82 | 7.92 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.26  | 0.52  | 2.27  | 3.56  | 0.57 | 1.22 | 5.79  | 0.51 | 1.08 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |       |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|-------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.54   | 0.33   | 0.78   | 0.69  | 0.45   | 0.47   | 0.38  | 0.41   | 0.42   |
| d, Delay for Lane Group [s/veh]       | 37.02  | 34.78  | 38.73  | 44.62 | 6.95   | 7.73   | 49.20 | 8.33   | 9.00   |
| Lane Group LOS                        | D      | C      | D      | D     | A      | A      | D     | A      | A      |
| Critical Lane Group                   | No     | No     | Yes    | No    | No     | Yes    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.99   | 2.37   | 5.02   | 1.86  | 4.43   | 4.92   | 0.39  | 4.27   | 4.66   |
| 50th-Percentile Queue Length [ft/ln]  | 99.75  | 59.30  | 125.54 | 46.61 | 110.70 | 122.94 | 9.76  | 106.84 | 116.48 |
| 95th-Percentile Queue Length [veh/ln] | 7.18   | 4.27   | 8.70   | 3.36  | 7.88   | 8.55   | 0.70  | 7.66   | 8.20   |
| 95th-Percentile Queue Length [ft/ln]  | 179.54 | 106.73 | 217.41 | 83.91 | 196.98 | 213.87 | 17.57 | 191.60 | 204.98 |

**Movement, Approach, & Intersection Results**

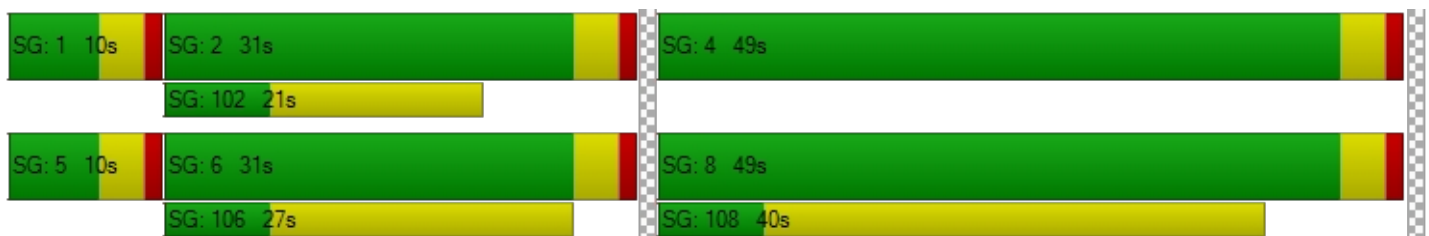
|                                 |       |       |       |       |       |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 37.02 | 37.02 | 37.02 | 34.78 | 34.78 | 38.73 | 44.62 | 7.21 | 7.73 | 49.20 | 8.55 | 9.00 |
| Movement LOS                    | D     | D     | D     | C     | C     | D     | D     | A    | A    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 37.02 |       |       | 37.93 |       |       | 10.32 |      |      | 8.96  |      |      |
| Approach LOS                    | D     |       |       | D     |       |       | B     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 14.81 |       |       |       |       |       |       |      |      |       |      |      |
| Intersection LOS                | B     |       |       |       |       |       |       |      |      |       |      |      |
| Intersection V/C                | 0.525 |       |       |       |       |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 0.00  | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.833 | 2.454 | 0.000 | 3.243 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1000  | 1000  | 600   | 600   |
| d_b, Bicycle Delay [s]                                   | 11.26 | 11.26 | 22.06 | 22.06 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.873 | 2.525 | 2.639 | 2.402 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 18.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.588 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No          |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |             |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 125               | 48     | 19     | 77          | 94     | 125    | 41           | 1633   | 186    | 23           | 1181   | 40     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 125               | 48     | 19     | 77          | 94     | 125    | 41           | 1633   | 186    | 23           | 1181   | 40     |
| Peak Hour Factor                            | 0.8450            | 0.8450 | 0.8450 | 0.6830      | 0.6830 | 0.6830 | 0.9820       | 0.9820 | 0.9820 | 0.9590       | 0.9590 | 0.9590 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 37                | 14     | 6      | 28          | 34     | 46     | 10           | 416    | 47     | 6            | 308    | 10     |
| Total Analysis Volume [veh/h]               | 148               | 57     | 22     | 113         | 138    | 183    | 42           | 1663   | 189    | 24           | 1231   | 42     |
| Presence of On-Street Parking               | No                |        | No     | No          |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 19       | 27      | 0       | 22       | 30      | 0       | 10       | 31      | 0       | 10       | 31      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 16      | 0       | 0        | 19      | 0       | 0        | 20      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R    | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90   | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 9     | 13    | 13    | 7     | 11    | 11    | 4     | 51    | 51   | 3     | 50    | 50    |
| g / C, Green / Cycle                    | 0.10  | 0.15  | 0.15  | 0.08  | 0.12  | 0.12  | 0.04  | 0.56  | 0.56 | 0.03  | 0.55  | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.02  | 0.02  | 0.06  | 0.07  | 0.10  | 0.01  | 0.29  | 0.10 | 0.01  | 0.22  | 0.23  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1900  | 1900  | 3500  | 5700  | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 185   | 278   | 278   | 147   | 238   | 238   | 156   | 3210  | 1070 | 57    | 2090  | 1045  |
| d1, Uniform Delay [s]                   | 39.53 | 33.57 | 33.54 | 40.57 | 37.22 | 38.20 | 41.65 | 12.15 | 9.56 | 42.87 | 11.73 | 11.84 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 7.67  | 0.24  | 0.23  | 8.15  | 2.24  | 5.23  | 0.91  | 0.60  | 0.36 | 4.94  | 0.58  | 1.22  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |       |        |        |        |       |        |       |       |        |        |
|---------------------------------------|--------|-------|-------|--------|--------|--------|-------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.80   | 0.14  | 0.14  | 0.77   | 0.58   | 0.77   | 0.27  | 0.52   | 0.18  | 0.42  | 0.40   | 0.41   |
| d, Delay for Lane Group [s/veh]       | 47.21  | 33.81 | 33.77 | 48.72  | 39.47  | 43.43  | 42.56 | 12.75  | 9.92  | 47.80 | 12.30  | 13.05  |
| Lane Group LOS                        | D      | C     | C     | D      | D      | D      | D     | B      | A     | D     | B      | B      |
| Critical Lane Group                   | Yes    | No    | No    | No     | No     | Yes    | No    | Yes    | No    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.55   | 0.78  | 0.75  | 2.76   | 2.98   | 4.20   | 0.47  | 6.45   | 1.79  | 0.60  | 4.66   | 5.04   |
| 50th-Percentile Queue Length [ft/ln]  | 88.81  | 19.49 | 18.70 | 68.95  | 74.48  | 104.94 | 11.67 | 161.15 | 44.70 | 14.94 | 116.50 | 125.93 |
| 95th-Percentile Queue Length [veh/ln] | 6.39   | 1.40  | 1.35  | 4.96   | 5.36   | 7.56   | 0.84  | 10.61  | 3.22  | 1.08  | 8.20   | 8.72   |
| 95th-Percentile Queue Length [ft/ln]  | 159.86 | 35.09 | 33.66 | 124.10 | 134.06 | 188.90 | 21.01 | 265.25 | 80.45 | 26.89 | 205.00 | 217.96 |

**Movement, Approach, & Intersection Results**

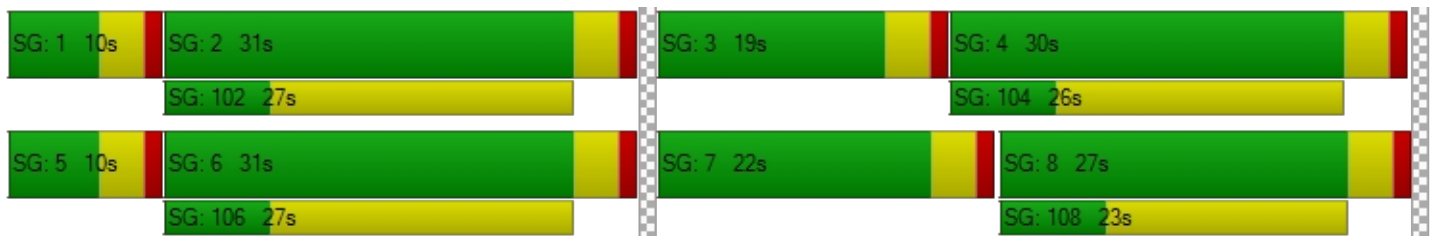
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 47.21 | 33.80 | 33.77 | 48.72 | 39.47 | 43.43 | 42.56 | 12.75 | 9.92 | 47.80 | 12.54 | 13.05 |
| Movement LOS                    | D     | C     | C     | D     | D     | D     | D     | B     | A    | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 42.54 |       |       | 43.55 |       |       | 13.13 |       |      | 13.21 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 18.32 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | B     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.588 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.72 | 34.72 | 34.72 | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.412 | 2.412 | 3.223 | 3.025 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 511   | 577   | 599   | 599   |
| d_b, Bicycle Delay [s]                                   | 24.98 | 22.80 | 22.09 | 22.09 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.747 | 1.918 | 2.601 | 2.273 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 29.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.572 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No            |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 474               | 279    | 207    | 4             | 94     | 108    | 172          | 787    | 447    | 74           | 312    | 26     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 474               | 279    | 207    | 4             | 94     | 108    | 172          | 787    | 447    | 74           | 312    | 26     |
| Peak Hour Factor                            | 0.9310            | 0.9310 | 0.9310 | 0.9020        | 0.9020 | 0.9020 | 0.7940       | 0.7940 | 0.7940 | 0.8150       | 0.8150 | 0.8150 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 127               | 75     | 56     | 1             | 26     | 30     | 54           | 248    | 141    | 23           | 96     | 8      |
| Total Analysis Volume [veh/h]               | 509               | 300    | 222    | 4             | 104    | 120    | 217          | 991    | 563    | 91           | 383    | 32     |
| Presence of On-Street Parking               | No                |        | No     | No            |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 6        | 6       | 0       | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 30       | 30      | 0       | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 25       | 57      | 57      | 10       | 42      | 0       | 21       | 43      | 43      | 10       | 32      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0        | 7       | 0       | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 30      | 30      | 0        | 31      | 0       | 0        | 26      | 26      | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Maximum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 20    | 29    | 39    | 1     | 10    | 10    | 16    | 68    | 92   | 6     | 58    | 58    |
| g / C, Green / Cycle                    | 0.17  | 0.24  | 0.33  | 0.01  | 0.08  | 0.08  | 0.14  | 0.57  | 0.77 | 0.05  | 0.48  | 0.48  |
| (v / s)_i Volume / Saturation Flow Rate | 0.15  | 0.16  | 0.12  | 0.00  | 0.05  | 0.06  | 0.12  | 0.26  | 0.15 | 0.03  | 0.07  | 0.07  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 3800 | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 581   | 460   | 620   | 13    | 158   | 158   | 245   | 2153  | 2911 | 178   | 1830  | 915   |
| d1, Uniform Delay [s]                   | 48.86 | 40.95 | 30.86 | 59.30 | 53.36 | 53.84 | 50.97 | 15.25 | 3.86 | 55.54 | 17.39 | 17.43 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.39  | 1.57  | 0.35  | 12.82 | 4.57  | 7.21  | 10.40 | 0.71  | 0.15 | 2.28  | 0.17  | 0.36  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |        |        |        |        |       |       |       |        |
|---------------------------------------|--------|--------|--------|-------|--------|--------|--------|--------|-------|-------|-------|--------|
| X, volume / capacity                  | 0.88   | 0.65   | 0.36   | 0.31  | 0.66   | 0.76   | 0.89   | 0.46   | 0.19  | 0.51  | 0.15  | 0.15   |
| d, Delay for Lane Group [s/veh]       | 53.26  | 42.52  | 31.21  | 72.12 | 57.93  | 61.05  | 61.37  | 15.96  | 4.01  | 57.81 | 17.56 | 17.78  |
| Lane Group LOS                        | D      | D      | C      | E     | E      | E      | E      | B      | A     | E     | B     | B      |
| Critical Lane Group                   | Yes    | No     | No     | No    | No     | Yes    | No     | Yes    | No    | Yes   | No    | No     |
| 50th-Percentile Queue Length [veh/ln] | 7.78   | 8.17   | 4.99   | 0.17  | 3.25   | 3.86   | 7.11   | 7.95   | 1.68  | 1.40  | 2.17  | 2.28   |
| 50th-Percentile Queue Length [ft/ln]  | 194.47 | 204.37 | 124.63 | 4.19  | 81.18  | 96.59  | 177.64 | 198.67 | 41.97 | 35.01 | 54.23 | 56.94  |
| 95th-Percentile Queue Length [veh/ln] | 12.35  | 12.86  | 8.65   | 0.30  | 5.84   | 6.95   | 11.48  | 12.57  | 3.02  | 2.52  | 3.90  | 4.10   |
| 95th-Percentile Queue Length [ft/ln]  | 308.82 | 321.60 | 216.18 | 7.53  | 146.12 | 173.86 | 286.93 | 314.25 | 75.55 | 63.02 | 97.61 | 102.49 |

**Movement, Approach, & Intersection Results**

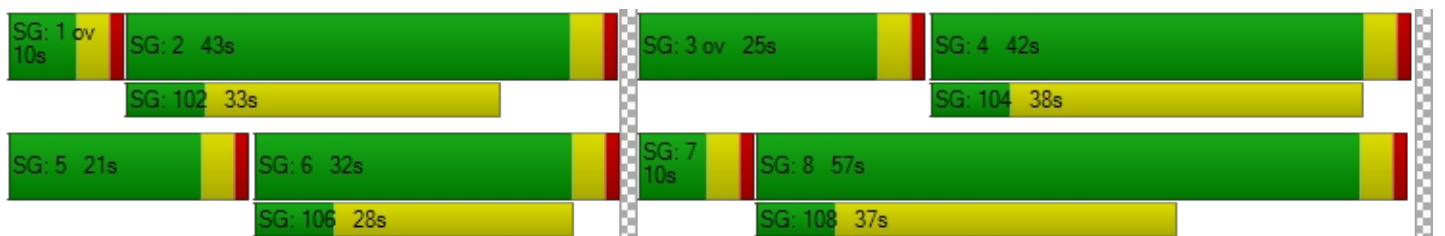
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 53.26 | 42.52 | 31.21 | 72.12 | 57.93 | 61.05 | 61.37 | 15.96 | 4.01 | 57.81 | 17.63 | 17.78 |
| Movement LOS                    | D     | D     | C     | E     | E     | E     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 45.39 |       |       | 59.82 |       |       | 17.72 |       |      | 24.86 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | B     |       |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 29.53 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.572 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.757 |  |  | 2.334 |  |  | 3.078 |  |  | 2.848 |  |  |
| Crosswalk LOS  | C     |  |  | B     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 883   |  |  | 633   |  |  | 650   |  |  | 467   |  |  |
| d_b, Bicycle Delay [s]                                   | 18.72 |  |  | 28.03 |  |  | 27.35 |  |  | 35.28 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 3.261 |  |  | 1.936 |  |  | 3.021 |  |  | 1.838 |  |  |
| Bicycle LOS  | C     |  |  | A     |  |  | C     |  |  | A     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 6.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.394 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No               |        |        | No               |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |



**Volumes**

| Name  | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 24               | 2      | 11     | 2                | 0      | 5      | 5            | 1154   | 19     | 5            | 563    | 3      |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 24               | 2      | 11     | 2                | 0      | 5      | 5            | 1154   | 19     | 5            | 563    | 3      |
| Peak Hour Factor                            | 0.5290           | 0.5290 | 0.5290 | 0.5830           | 1.0000 | 0.5830 | 0.9620       | 0.9620 | 0.9620 | 0.9380       | 0.9380 | 0.9380 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 11               | 1      | 5      | 1                | 0      | 2      | 1            | 300    | 5      | 1            | 150    | 1      |
| Total Analysis Volume [veh/h]               | 45               | 4      | 21     | 3                | 0      | 9      | 5            | 1200   | 20     | 5            | 600    | 3      |
| Presence of On-Street Parking               | No               |        | No     | No               |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 6       | 0       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 30      | 0       | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 40      | 0       | 40      | 0       | 0       | 10       | 30      | 0       | 10       | 30      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 7       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 29      | 0       | 29      | 0       | 0       | 0        | 18      | 0       | 0        | 16      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         | No      |         |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 2     | 2     | 1     | 96   | 96   | 1     | 96   | 96   |
| g / C, Green / Cycle                    | 0.05  | 0.05  | 0.02  | 0.02  | 0.01  | 0.80 | 0.80 | 0.01  | 0.80 | 0.80 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03  | 0.01  | 0.00  | 0.00  | 0.00  | 0.32 | 0.32 | 0.00  | 0.10 | 0.11 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 82    | 87    | 31    | 32    | 15    | 1512 | 1512 | 15    | 3025 | 1512 |
| d1, Uniform Delay [s]                   | 56.07 | 55.40 | 58.09 | 58.27 | 59.20 | 3.68 | 3.67 | 59.20 | 2.79 | 2.80 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.61  | 1.81  | 1.38  | 4.61  | 13.08 | 0.81 | 0.80 | 13.08 | 0.09 | 0.19 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |       |       |       |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
| X, volume / capacity                  | 0.55  | 0.29  | 0.10  | 0.28  | 0.34  | 0.40   | 0.40   | 0.34  | 0.13  | 0.14  |
| d, Delay for Lane Group [s/veh]       | 61.68 | 57.21 | 59.48 | 62.88 | 72.29 | 4.49   | 4.47   | 72.29 | 2.88  | 2.99  |
| Lane Group LOS                        | E     | E     | E     | E     | E     | A      | A      | E     | A     | A     |
| Critical Lane Group                   | Yes   | No    | No    | Yes   | No    | Yes    | No     | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.46  | 0.78  | 0.10  | 0.31  | 0.20  | 3.85   | 3.82   | 0.20  | 0.90  | 0.99  |
| 50th-Percentile Queue Length [ft/ln]  | 36.59 | 19.42 | 2.54  | 7.79  | 5.12  | 96.27  | 95.50  | 5.12  | 22.43 | 24.65 |
| 95th-Percentile Queue Length [veh/ln] | 2.63  | 1.40  | 0.18  | 0.56  | 0.37  | 6.93   | 6.88   | 0.37  | 1.62  | 1.77  |
| 95th-Percentile Queue Length [ft/ln]  | 65.86 | 34.96 | 4.57  | 14.02 | 9.21  | 173.29 | 171.91 | 9.21  | 40.38 | 44.37 |

**Movement, Approach, & Intersection Results**

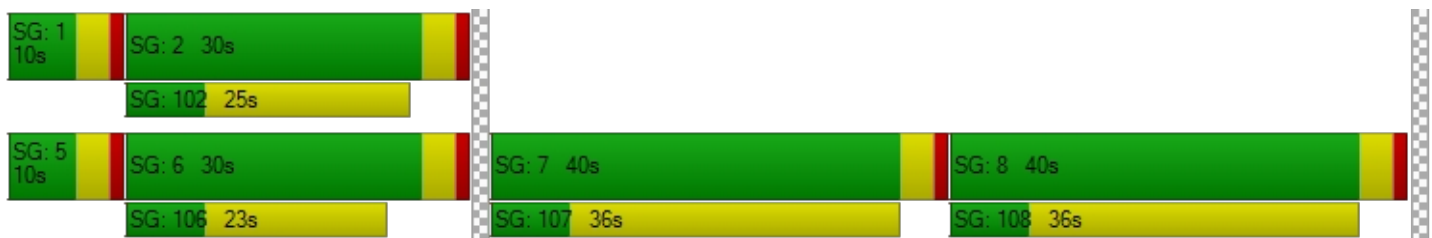
|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 61.68 | 57.21 | 57.21 | 59.48 | 0.00 | 62.88 | 72.29 | 4.48 | 4.47 | 72.29 | 2.92 | 2.99 |
| Movement LOS                    | E     | E     | E     | E     |      | E     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 60.09 |       |       | 62.03 |      |       | 4.76  |      |      | 3.49  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 6.74  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.394 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.985 | 1.962 | 2.772 | 2.764 |
| Crosswalk LOS  | A     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 600   | 600   | 433   | 433   |
| d_b, Bicycle Delay [s]                                   | 29.41 | 29.41 | 36.82 | 36.82 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.675 | 1.560 | 2.570 | 1.894 |
| Bicycle LOS  | A     | A     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 31.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.607 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound          |        |        |
| Lane Configuration           |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 0      | 1            | 0      | 0      | 1                  | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00               |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No                 |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes                |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 308             | 132    | 694    | 23              | 99     | 30     | 25           | 687    | 445    | 130                | 229    | 8      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 308             | 132    | 694    | 23              | 99     | 30     | 25           | 687    | 445    | 130                | 229    | 8      |
| Peak Hour Factor                            | 0.9730          | 0.9730 | 0.9730 | 0.6340          | 0.6340 | 0.6340 | 0.9200       | 0.9200 | 0.9200 | 0.9080             | 0.9080 | 0.9080 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 79              | 34     | 178    | 9               | 39     | 12     | 7            | 187    | 121    | 36                 | 63     | 2      |
| Total Analysis Volume [veh/h]               | 317             | 136    | 713    | 36              | 156    | 47     | 27           | 747    | 484    | 143                | 252    | 9      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Unsigna | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 30       | 60      | 0       | 13       | 43      | 0       | 10       | 36      | 0       | 11       | 37      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 31      | 0       | 0        | 32      | 0       | 0        | 25      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | C     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 23    | 28    | 4     | 9     | 9     | 4     | 65    | 65    | 7     | 69    | 69    |
| g / C, Green / Cycle                    | 0.19  | 0.23  | 0.04  | 0.07  | 0.07  | 0.03  | 0.54  | 0.54  | 0.06  | 0.57  | 0.57  |
| (v / s)_i Volume / Saturation Flow Rate | 0.18  | 0.04  | 0.02  | 0.05  | 0.05  | 0.02  | 0.20  | 0.25  | 0.04  | 0.05  | 0.05  |
| s, saturation flow rate [veh/h]         | 1800  | 3800  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 346   | 875   | 64    | 141   | 141   | 55    | 2065  | 1033  | 200   | 2166  | 1083  |
| d1, Uniform Delay [s]                   | 47.57 | 36.88 | 56.95 | 54.42 | 54.31 | 57.27 | 15.57 | 16.79 | 55.64 | 11.62 | 11.65 |
| k, delay calibration                    | 0.23  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 18.15 | 0.08  | 7.35  | 7.18  | 6.39  | 6.61  | 0.49  | 1.53  | 4.72  | 0.07  | 0.15  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |       |        |        |       |        |        |        |       |       |
|---------------------------------------|--------|-------|-------|--------|--------|-------|--------|--------|--------|-------|-------|
| X, volume / capacity                  | 0.92   | 0.16  | 0.56  | 0.73   | 0.71   | 0.49  | 0.36   | 0.47   | 0.72   | 0.08  | 0.08  |
| d, Delay for Lane Group [s/veh]       | 65.72  | 36.97 | 64.29 | 61.60  | 60.71  | 63.88 | 16.06  | 18.31  | 60.37  | 11.69 | 11.80 |
| Lane Group LOS                        | E      | D     | E     | E      | E      | E     | B      | B      | E      | B     | B     |
| Critical Lane Group                   | Yes    | No    | No    | Yes    | No     | No    | No     | Yes    | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 11.00  | 1.62  | 1.21  | 3.34   | 3.20   | 0.91  | 5.86   | 8.43   | 2.26   | 1.05  | 1.12  |
| 50th-Percentile Queue Length [ft/ln]  | 275.01 | 40.41 | 30.18 | 83.46  | 79.91  | 22.71 | 146.62 | 210.84 | 56.51  | 26.20 | 27.91 |
| 95th-Percentile Queue Length [veh/ln] | 16.44  | 2.91  | 2.17  | 6.01   | 5.75   | 1.64  | 9.84   | 13.20  | 4.07   | 1.89  | 2.01  |
| 95th-Percentile Queue Length [ft/ln]  | 410.99 | 72.74 | 54.32 | 150.24 | 143.83 | 40.88 | 245.90 | 329.90 | 101.72 | 47.16 | 50.24 |



**Movement, Approach, & Intersection Results**

|                                 |       |       |      |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 65.72 | 36.97 | 0.00 | 64.29 | 61.30 | 60.71 | 63.88 | 16.06 | 18.31 | 60.37 | 11.73 | 11.80 |
| Movement LOS                    | E     | D     |      | E     | E     | E     | E     | B     | B     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 57.08 |       |      | 61.63 |       |       | 17.96 |       |       | 28.94 |       |       |
| Approach LOS                    | E     |       |      | E     |       |       | B     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 31.81 |       |      |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |      |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.607 |       |      |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.668 | 2.394 | 2.869 | 2.884 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 933   | 650   | 533   | 550   |
| d_b, Bicycle Delay [s]                                   | 17.08 | 27.35 | 32.28 | 31.55 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.933 | 1.757 | 2.252 | 1.782 |
| Bicycle LOS  | A     | A     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.0   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.475 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ↱             |        |        | ↵↶                 |        |        | ↵↷                 |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Curb Present                 | No            |        |        | No            |        |        | No                 |        |        | No                 |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name  | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
|   |               |        |        |               |        |        |                    |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 10            | 0      | 2      | 0             | 0      | 14     | 1                  | 1426   | 2      | 1                  | 288    | 7      |
| Base Volume Adjustment Factor               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 10            | 0      | 2      | 0             | 0      | 14     | 1                  | 1426   | 2      | 1                  | 288    | 7      |
| Peak Hour Factor                            | 0.6000        | 0.6000 | 0.6000 | 1.0000        | 1.0000 | 0.5000 | 0.9170             | 0.9170 | 0.9170 | 0.8280             | 0.8280 | 0.8280 |
| Other Adjustment Factor                     | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 4             | 0      | 1      | 0             | 0      | 7      | 0                  | 389    | 1      | 0                  | 87     | 2      |
| Total Analysis Volume [veh/h]               | 17            | 0      | 3      | 0             | 0      | 28     | 1                  | 1555   | 2      | 1                  | 348    | 8      |
| Presence of On-Street Parking               | No            |        | No     | No            |        | No     | No                 |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 0       | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 0       | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 0.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 35      | 0       | 0       | 0       | 35      | 10       | 70      | 0       | 10       | 70      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 24      | 0       | 0       | 0       | 0       | 0        | 17      | 0       | 0        | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         |         | No      |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115  | 115  | 115   | 115  | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 4     | 4     | 0     | 99   | 99   | 0     | 99   | 99   |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.00  | 0.86 | 0.86 | 0.00  | 0.86 | 0.86 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.01  | 0.00  | 0.41 | 0.41 | 0.00  | 0.09 | 0.00 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900 | 1900 | 1900  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 114   | 59    | 4     | 1638 | 1638 | 4     | 3276 | 1638 |
| d1, Uniform Delay [s]                   | 54.55 | 54.76 | 57.27 | 1.85 | 1.85 | 57.27 | 1.20 | 1.10 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.72  | 5.70  | 32.14 | 0.99 | 0.99 | 28.64 | 0.07 | 0.01 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |        |        |       |       |      |
|---------------------------------------|-------|-------|-------|--------|--------|-------|-------|------|
| X, volume / capacity                  | 0.18  | 0.47  | 0.26  | 0.48   | 0.48   | 0.25  | 0.11  | 0.00 |
| d, Delay for Lane Group [s/veh]       | 55.28 | 60.46 | 89.41 | 2.84   | 2.84   | 85.91 | 1.27  | 1.10 |
| Lane Group LOS                        | E     | E     | F     | A      | A      | F     | A     | A    |
| Critical Lane Group                   | No    | Yes   | No    | Yes    | No     | Yes   | No    | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.59  | 0.89  | 0.06  | 2.43   | 2.43   | 0.06  | 0.32  | 0.01 |
| 50th-Percentile Queue Length [ft/ln]  | 14.76 | 22.29 | 1.59  | 60.79  | 60.76  | 1.54  | 7.93  | 0.36 |
| 95th-Percentile Queue Length [veh/ln] | 1.06  | 1.60  | 0.11  | 4.38   | 4.37   | 0.11  | 0.57  | 0.03 |
| 95th-Percentile Queue Length [ft/ln]  | 26.57 | 40.12 | 2.86  | 109.43 | 109.37 | 2.76  | 14.28 | 0.65 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 55.28 | 55.28 | 55.28 | 0.00  | 0.00 | 60.46 | 89.41 | 2.84 | 2.84 | 85.91 | 1.27 | 1.10 |
| Movement LOS                    | E     | E     | E     |       |      | E     | F     | A    | A    | F     | A    | A    |
| d_A, Approach Delay [s/veh]     | 55.28 |       |       | 60.46 |      |       | 2.90  |      |      | 1.50  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 4.00  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.475 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.02 | 47.02 | 0.00  | 47.02 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.738 | 1.745 | 0.000 | 2.776 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 539   | 539   | 1148  | 1148  |
| d_b, Bicycle Delay [s]                                   | 30.67 | 30.67 | 10.43 | 10.43 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.593 | 1.560 | 2.845 | 1.854 |
| Bicycle LOS  | A     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 30.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.698 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                         |        |        |                         |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 135                     | 337    | 150    | 301                     | 309    | 250    | 188          | 720    | 150    | 135          | 922    | 584    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 135                     | 337    | 150    | 301                     | 309    | 250    | 188          | 720    | 150    | 135          | 922    | 584    |
| Peak Hour Factor                            | 0.9210                  | 0.9210 | 0.9210 | 0.9620                  | 0.9620 | 0.9620 | 0.9110       | 0.9110 | 0.9110 | 0.9550       | 0.9550 | 0.9550 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 37                      | 91     | 41     | 78                      | 80     | 65     | 52           | 198    | 41     | 35           | 241    | 153    |
| Total Analysis Volume [veh/h]               | 147                     | 366    | 163    | 313                     | 321    | 260    | 206          | 790    | 165    | 141          | 965    | 612    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 17       | 46      | 0       | 12       | 39      | 0       | 10       | 37      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 30      | 0       | 0        | 28      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 15    | 15    | 11    | 21    | 21    | 8     | 56    | 56    | 6     | 54    | 54    |
| g / C, Green / Cycle                    | 0.06  | 0.14  | 0.14  | 0.11  | 0.20  | 0.20  | 0.08  | 0.54  | 0.54  | 0.06  | 0.52  | 0.52  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.10  | 0.09  | 0.09  | 0.17  | 0.14  | 0.06  | 0.21  | 0.09  | 0.04  | 0.25  | 0.32  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 203   | 552   | 276   | 382   | 373   | 373   | 269   | 2035  | 1017  | 203   | 1963  | 981   |
| d1, Uniform Delay [s]                   | 48.69 | 42.50 | 42.01 | 45.81 | 40.85 | 39.33 | 47.59 | 14.32 | 12.42 | 48.60 | 16.47 | 18.12 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.85  | 1.38  | 2.01  | 4.39  | 5.88  | 2.36  | 4.51  | 0.56  | 0.34  | 4.24  | 0.88  | 2.99  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |        |        |        |        |        |       |       |        |        |
|---------------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.72  | 0.66   | 0.59   | 0.82   | 0.86   | 0.70   | 0.77   | 0.39   | 0.16  | 0.69  | 0.49   | 0.62   |
| d, Delay for Lane Group [s/veh]       | 53.54 | 43.88  | 44.02  | 50.20  | 46.73  | 41.69  | 52.10  | 14.88  | 12.76 | 52.84 | 17.35  | 21.11  |
| Lane Group LOS                        | D     | D      | D      | D      | D      | D      | D      | B      | B     | D     | B      | C      |
| Critical Lane Group                   | Yes   | No     | No     | No     | Yes    | No     | Yes    | No     | No    | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 2.03  | 4.58   | 4.09   | 4.21   | 4.28   | 6.44   | 2.80   | 5.46   | 2.02  | 1.93  | 7.48   | 10.92  |
| 50th-Percentile Queue Length [ft/ln]  | 50.64 | 114.38 | 102.25 | 105.18 | 106.97 | 161.07 | 70.06  | 136.61 | 50.48 | 48.20 | 187.02 | 273.01 |
| 95th-Percentile Queue Length [veh/ln] | 3.65  | 8.08   | 7.36   | 7.57   | 7.67   | 10.61  | 5.04   | 9.30   | 3.63  | 3.47  | 11.97  | 16.34  |
| 95th-Percentile Queue Length [ft/ln]  | 91.15 | 202.08 | 184.04 | 189.28 | 191.78 | 265.14 | 126.11 | 232.45 | 90.87 | 86.76 | 299.16 | 408.50 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 53.54 | 43.88 | 44.02 | 50.20 | 46.73 | 41.69 | 52.10 | 14.88 | 12.76 | 52.84 | 17.35 | 21.11 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | B     | B     | D     | B     | C     |
| d_A, Approach Delay [s/veh]     | 46.01 |       |       | 46.48 |       |       | 21.18 |       |       | 21.60 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 30.20 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.698 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.11 | 42.11 | 42.11 | 42.11 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.783 | 2.891 | 2.954 | 3.017 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 666   | 800   | 666   | 628   |
| d_b, Bicycle Delay [s]                                   | 23.36 | 18.93 | 23.36 | 24.71 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.117 | 2.297 | 2.517 | 2.977 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.642 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐           |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 447               | 31     | 333    | 10                | 19     | 6      | 12           | 828    | 278    | 275          | 1176   | 16     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 447               | 31     | 333    | 10                | 19     | 6      | 12           | 828    | 278    | 275          | 1176   | 16     |
| Peak Hour Factor                            | 0.9370            | 0.9370 | 0.9370 | 0.8500            | 0.8500 | 0.8500 | 0.9910       | 0.9910 | 0.9910 | 0.9420       | 0.9420 | 0.9420 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 119               | 8      | 89     | 3                 | 6      | 2      | 3            | 209    | 70     | 73           | 312    | 4      |
| Total Analysis Volume [veh/h]               | 477               | 33     | 355    | 12                | 22     | 7      | 12           | 836    | 281    | 292          | 1248   | 17     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 23       | 60      | 60      | 0       | 37      | 0       | 10       | 38      | 0       | 17       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 26      | 0       | 26      | 0       | 0        | 27      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 18    | 26    | 43    | 4     | 4     | 2     | 64    | 64    | 13    | 75    | 75    |
| g / C, Green / Cycle                    | 0.15  | 0.23  | 0.37  | 0.04  | 0.04  | 0.02  | 0.56  | 0.56  | 0.11  | 0.65  | 0.65  |
| (v / s)_i Volume / Saturation Flow Rate | 0.14  | 0.02  | 0.19  | 0.01  | 0.02  | 0.01  | 0.31  | 0.28  | 0.08  | 0.33  | 0.33  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  |
| c, Capacity [veh/h]                     | 538   | 431   | 713   | 79    | 73    | 31    | 1055  | 1055  | 396   | 1238  | 1238  |
| d1, Uniform Delay [s]                   | 47.69 | 34.97 | 27.62 | 53.53 | 53.99 | 55.94 | 16.41 | 15.83 | 49.34 | 10.48 | 10.47 |
| k, delay calibration                    | 0.11  | 0.11  | 0.24  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.12  | 0.07  | 1.21  | 0.87  | 3.43  | 7.82  | 2.08  | 1.74  | 2.68  | 1.51  | 1.50  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.89   | 0.08  | 0.50   | 0.15  | 0.40  | 0.39  | 0.55   | 0.51   | 0.74   | 0.51   | 0.51   |
| d, Delay for Lane Group [s/veh]       | 52.81  | 35.04 | 28.83  | 54.39 | 57.43 | 63.76 | 18.49  | 17.56  | 52.03  | 12.00  | 11.97  |
| Lane Group LOS                        | D      | D     | C      | D     | E     | E     | B      | B      | D      | B      | B      |
| Critical Lane Group                   | No     | No    | Yes    | No    | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 7.05   | 0.74  | 7.70   | 0.36  | 0.89  | 0.41  | 10.11  | 8.92   | 4.20   | 8.34   | 8.31   |
| 50th-Percentile Queue Length [ft/ln]  | 176.33 | 18.54 | 192.56 | 8.89  | 22.24 | 10.29 | 252.86 | 222.92 | 105.04 | 208.60 | 207.64 |
| 95th-Percentile Queue Length [veh/ln] | 11.41  | 1.34  | 12.25  | 0.64  | 1.60  | 0.74  | 15.33  | 13.81  | 7.56   | 13.08  | 13.03  |
| 95th-Percentile Queue Length [ft/ln]  | 285.22 | 33.38 | 306.35 | 16.00 | 40.04 | 18.52 | 383.25 | 345.34 | 189.07 | 327.04 | 325.79 |

**Movement, Approach, & Intersection Results**

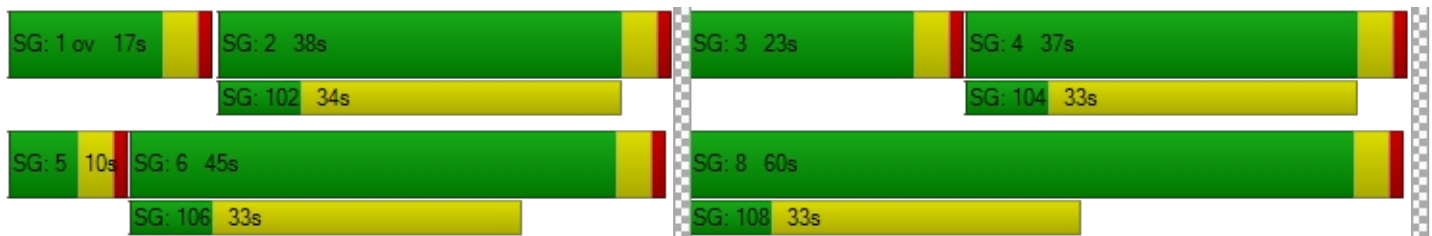
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.81 | 35.04 | 28.83 | 54.39 | 57.43 | 57.43 | 63.76 | 18.21 | 17.56 | 52.03 | 11.98 | 11.97 |
| Movement LOS                    | D     | D     | C     | D     | E     | E     | E     | B     | B     | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 42.29 |       |       | 56.54 |       |       | 18.53 |       |       | 19.49 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | B     |       |       | B     |       |       |
| d_I, Intersection Delay [s/veh] | 25.10 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.642 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.04 | 47.04 | 47.04 | 47.04 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.702 | 1.985 | 2.869 | 2.930 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 974   | 574   | 591   | 713   |
| d_b, Bicycle Delay [s]                                   | 15.14 | 29.24 | 28.54 | 23.82 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.987 | 1.627 | 2.491 | 2.844 |
| Bicycle LOS  | C     | A     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |









**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.776 |

**Intersection Setup**

| Name                         | N Associated Road   |        |        | N Associated Road   |        |        | Birch Street  |        |        | Birch Street  |        |        |
|------------------------------|---|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |  |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1      | 1   | 0      | 1      | 1   | 0      | 0      | 1   | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 | No  |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes   |        |        | Yes   |        |        | Yes   |        |        | No  |        |        |

**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Peak Hour Factor                            | 0.7500            | 0.7500 | 0.7500 | 0.8100            | 0.8100 | 0.8100 | 0.9290       | 0.9290 | 0.9290 | 0.9040       | 0.9040 | 0.9040 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 4                 | 1      | 3      | 30                | 1      | 85     | 71           | 233    | 3      | 1            | 335    | 35     |
| Total Analysis Volume [veh/h]               | 16                | 3      | 13     | 119               | 4      | 340    | 285          | 930    | 12     | 6            | 1342   | 140    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 34       | 56      | 0       | 10       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C    | C    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110  | 110  | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4     | 4     | 4     | 16    | 16    | 49    | 20    | 73   | 73   | 1     | 53    | 53    |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.03  | 0.15  | 0.15  | 0.44  | 0.18  | 0.66 | 0.66 | 0.01  | 0.49  | 0.49  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.00  | 0.01  | 0.03  | 0.03  | 0.18  | 0.16  | 0.25 | 0.25 | 0.00  | 0.35  | 0.07  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 101   | 67    | 67    | 269   | 269   | 840   | 333   | 1254 | 1254 | 18    | 1844  | 922   |
| d1, Uniform Delay [s]                   | 51.72 | 51.34 | 51.61 | 41.23 | 41.24 | 20.88 | 43.46 | 8.47 | 8.46 | 54.11 | 22.54 | 15.74 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.20  | 0.14  | 0.50 | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.72  | 0.28  | 1.41  | 0.43  | 0.43  | 0.58  | 8.21  | 0.86 | 0.86 | 9.93  | 2.55  | 0.35  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.16  | 0.05  | 0.20  | 0.23  | 0.23  | 0.40   | 0.86   | 0.38   | 0.37   | 0.33  | 0.73   | 0.15  |
| d, Delay for Lane Group [s/veh]       | 52.44 | 51.61 | 53.02 | 41.66 | 41.66 | 21.45  | 51.67  | 9.33   | 9.32   | 64.04 | 25.10  | 16.09 |
| Lane Group LOS                        | D     | D     | D     | D     | D     | C      | D      | A      | A      | E     | C      | B     |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | Yes    | Yes    | No     | No     | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.45  | 0.09  | 0.37  | 1.50  | 1.51  | 6.01   | 8.22   | 5.00   | 4.98   | 0.22  | 13.97  | 2.03  |
| 50th-Percentile Queue Length [ft/ln]  | 11.25 | 2.13  | 9.37  | 37.52 | 37.65 | 150.25 | 205.58 | 125.11 | 124.41 | 5.39  | 349.23 | 50.73 |
| 95th-Percentile Queue Length [veh/ln] | 0.81  | 0.15  | 0.67  | 2.70  | 2.71  | 10.03  | 12.93  | 8.67   | 8.63   | 0.39  | 20.10  | 3.65  |
| 95th-Percentile Queue Length [ft/ln]  | 20.26 | 3.83  | 16.86 | 67.54 | 67.76 | 250.77 | 323.15 | 216.83 | 215.87 | 9.70  | 502.47 | 91.32 |

**Movement, Approach, & Intersection Results**

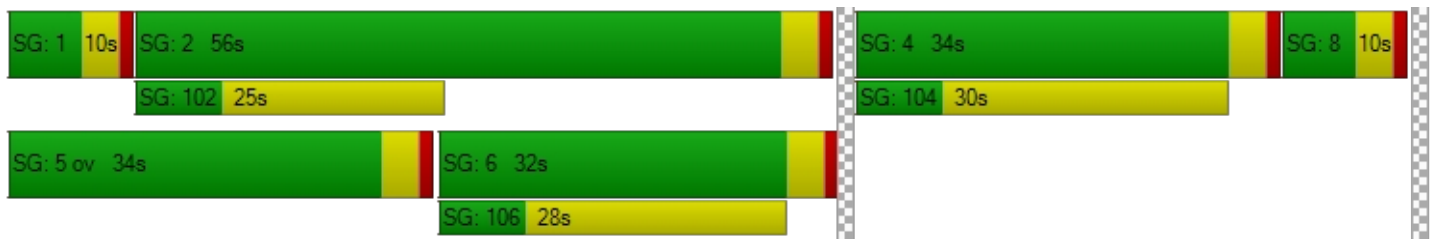
|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.44 | 51.61 | 53.02 | 41.66 | 41.66 | 21.45 | 51.67 | 9.33 | 9.32 | 64.04 | 25.10 | 16.09 |
| Movement LOS                    | D     | D     | D     | D     | D     | C     | D     | A    | A    | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 52.60 |       |       | 26.82 |       |       | 19.16 |      |      | 24.41 |       |       |
| Approach LOS                    | D     |       |       | C     |       |       | B     |      |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 23.03 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.776 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.58 | 44.58 | 44.58 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.154 | 2.358 | 2.903 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 109   | 545   | 945   | 509   |
| d_b, Bicycle Delay [s]                                   | 49.19 | 29.11 | 15.31 | 30.59 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.612 | 2.324 | 2.572 | 2.787 |
| Bicycle LOS  | A     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 41.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.704 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 563               | 697    | 117    | 204               | 353    | 97     | 204          | 678    | 278    | 73           | 647    | 201    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 563               | 697    | 117    | 204               | 353    | 97     | 204          | 678    | 278    | 73           | 647    | 201    |
| Peak Hour Factor                            | 0.9100            | 0.9100 | 0.9100 | 0.8350            | 0.8350 | 0.8350 | 0.8890       | 0.8890 | 0.8890 | 0.8090       | 0.8090 | 0.8090 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 155               | 191    | 32     | 61                | 106    | 29     | 57           | 191    | 78     | 23           | 200    | 62     |
| Total Analysis Volume [veh/h]               | 619               | 766    | 129    | 244               | 423    | 116    | 229          | 763    | 313    | 90           | 800    | 248    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 25       | 48      | 0       | 14       | 37      | 0       | 19       | 39      | 0       | 19       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 0       | 0        | 26      | 0       | 0        | 28      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 21    | 25    | 25    | 10    | 14    | 14    | 15    | 61    | 61    | 8     | 54    | 54    |
| g / C, Green / Cycle                    | 0.18  | 0.21  | 0.21  | 0.08  | 0.12  | 0.12  | 0.13  | 0.51  | 0.51  | 0.06  | 0.45  | 0.45  |
| (v / s)_i Volume / Saturation Flow Rate | 0.18  | 0.16  | 0.15  | 0.07  | 0.10  | 0.09  | 0.13  | 0.20  | 0.16  | 0.05  | 0.21  | 0.13  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 1800  | 3800  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 613   | 803   | 402   | 294   | 456   | 228   | 226   | 1928  | 964   | 115   | 1695  | 847   |
| d1, Uniform Delay [s]                   | 49.51 | 44.36 | 44.15 | 54.15 | 51.40 | 51.20 | 52.50 | 18.22 | 17.43 | 55.37 | 23.34 | 21.19 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 19.23 | 1.43  | 2.57  | 6.01  | 3.24  | 5.35  | 31.45 | 0.61  | 0.89  | 10.90 | 0.95  | 0.88  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 1.01   | 0.75   | 0.73   | 0.83   | 0.80   | 0.77   | 1.01   | 0.40   | 0.32   | 0.78   | 0.47   | 0.29   |
| d, Delay for Lane Group [s/veh]       | 68.75  | 45.79  | 46.72  | 60.16  | 54.64  | 56.54  | 83.96  | 18.83  | 18.33  | 66.27  | 24.28  | 22.06  |
| Lane Group LOS                        | F      | D      | D      | E      | D      | E      | F      | B      | B      | E      | C      | C      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | Yes    | No     | No     | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 10.79  | 8.53   | 8.41   | 3.87   | 5.53   | 5.44   | 8.76   | 6.62   | 5.30   | 3.03   | 8.11   | 4.65   |
| 50th-Percentile Queue Length [ft/ln]  | 269.75 | 213.19 | 210.15 | 96.85  | 138.26 | 136.04 | 218.93 | 165.39 | 132.62 | 75.83  | 202.79 | 116.19 |
| 95th-Percentile Queue Length [veh/ln] | 16.25  | 13.32  | 13.16  | 6.97   | 9.39   | 9.27   | 13.69  | 10.83  | 9.08   | 5.46   | 12.78  | 8.18   |
| 95th-Percentile Queue Length [ft/ln]  | 406.34 | 332.92 | 329.03 | 174.33 | 234.68 | 231.68 | 342.37 | 270.84 | 227.05 | 136.49 | 319.56 | 204.57 |

**Movement, Approach, & Intersection Results**

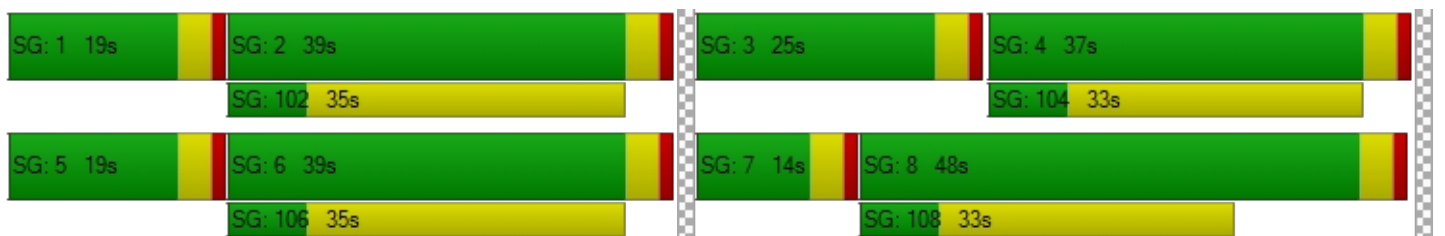
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 68.75 | 45.99 | 46.72 | 60.16 | 54.91 | 56.54 | 83.96 | 18.83 | 18.33 | 66.27 | 24.28 | 22.06 |
| Movement LOS                    | F     | D     | D     | E     | D     | E     | F     | B     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 55.36 |       |       | 56.79 |       |       | 30.14 |       |       | 27.12 |       |       |
| Approach LOS                    | E     |       |       | E     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 41.87 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.704 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 3.024 | 2.986 | 2.928 | 2.836 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 733   | 550   | 583   | 583   |
| d_b, Bicycle Delay [s]                                   | 24.08 | 31.55 | 30.12 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.392 | 1.990 | 2.636 | 2.498 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 57.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | E     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.009 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 186             | 510    | 14     | 416             | 205    | 36     | 168          | 582    | 130    | 11         | 430    | 707    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 186             | 510    | 14     | 416             | 205    | 36     | 168          | 582    | 130    | 11         | 430    | 707    |
| Peak Hour Factor                            | 0.8330          | 0.8330 | 0.8330 | 0.9110          | 0.9110 | 0.9110 | 0.9200       | 0.9200 | 0.9200 | 0.9250     | 0.9250 | 0.9250 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 56              | 153    | 4      | 114             | 56     | 10     | 46           | 158    | 35     | 3          | 116    | 191    |
| Total Analysis Volume [veh/h]               | 223             | 612    | 17     | 457             | 225    | 40     | 183          | 633    | 141    | 12         | 465    | 764    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 38       | 41      | 0       | 33       | 36      | 0       | 10       | 36      | 0       | 10       | 36      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 17    | 23    | 23    | 29    | 35    | 35    | 6     | 50    | 50    | 2     | 46    | 46    |
| g / C, Green / Cycle                    | 0.14  | 0.19  | 0.19  | 0.24  | 0.29  | 0.29  | 0.05  | 0.42  | 0.42  | 0.02  | 0.39  | 0.39  |
| (v / s)_i Volume / Saturation Flow Rate | 0.12  | 0.17  | 0.16  | 0.25  | 0.07  | 0.07  | 0.05  | 0.21  | 0.20  | 0.01  | 0.12  | 0.40  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 256   | 361   | 361   | 435   | 550   | 550   | 178   | 794   | 794   | 31    | 1461  | 731   |
| d1, Uniform Delay [s]                   | 50.43 | 47.26 | 47.17 | 45.53 | 32.65 | 32.53 | 56.98 | 25.76 | 25.34 | 58.35 | 25.91 | 36.95 |
| k, delay calibration                    | 0.11  | 0.12  | 0.11  | 0.46  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 8.96  | 7.32  | 6.69  | 55.56 | 0.23  | 0.22  | 39.36 | 2.27  | 2.01  | 7.47  | 0.57  | 45.84 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |       |        |         |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|---------|
| X, volume / capacity                  | 0.87   | 0.88   | 0.87   | 1.05   | 0.25   | 0.24   | 1.03   | 0.50   | 0.47   | 0.38  | 0.32   | 1.05    |
| d, Delay for Lane Group [s/veh]       | 59.39  | 54.58  | 53.86  | 101.09 | 32.88  | 32.75  | 96.34  | 28.03  | 27.35  | 65.82 | 26.48  | 82.79   |
| Lane Group LOS                        | E      | D      | D      | F      | C      | C      | F      | C      | C      | E     | C      | F       |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | No     | No     | Yes    | No     | No     | No    | No     | Yes     |
| 50th-Percentile Queue Length [veh/ln] | 7.18   | 9.88   | 9.71   | 19.55  | 3.08   | 2.92   | 3.66   | 8.85   | 8.14   | 0.43  | 4.78   | 30.22   |
| 50th-Percentile Queue Length [ft/ln]  | 179.62 | 246.99 | 242.87 | 488.86 | 76.96  | 72.95  | 91.60  | 221.25 | 203.60 | 10.66 | 119.62 | 755.55  |
| 95th-Percentile Queue Length [veh/ln] | 11.58  | 15.03  | 14.83  | 27.61  | 5.54   | 5.25   | 6.59   | 13.73  | 12.82  | 0.77  | 8.37   | 40.54   |
| 95th-Percentile Queue Length [ft/ln]  | 289.51 | 375.86 | 370.66 | 690.20 | 138.53 | 131.30 | 164.87 | 343.22 | 320.60 | 19.18 | 209.30 | 1013.47 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |        |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 59.39 | 54.23 | 53.86 | 101.09 | 32.83 | 32.75 | 96.34 | 27.78 | 27.35 | 65.82 | 26.48 | 82.79 |
| Movement LOS                    | E     | D     | D     | F      | C     | C     | F     | C     | C     | E     | C     | F     |
| d_A, Approach Delay [s/veh]     | 55.57 |       |       | 76.03  |       |       | 40.83 |       |       | 61.53 |       |       |
| Approach LOS                    | E     |       |       | E      |       |       | D     |       |       | E     |       |       |
| d_I, Intersection Delay [s/veh] | 57.71 |       |       |        |       |       |       |       |       |       |       |       |
| Intersection LOS                | E     |       |       |        |       |       |       |       |       |       |       |       |
| Intersection V/C                | 1.009 |       |       |        |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.553 | 2.758 | 2.740 | 2.848 |
| Crosswalk LOS  | B     | C     | B     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 617   | 533   | 533   | 533   |
| d_b, Bicycle Delay [s]                                   | 28.72 | 32.28 | 32.28 | 32.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.263 | 2.155 | 2.349 | 2.583 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.1   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.663 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           |            |        |            |        |                |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Curb Present                 | No         |        | No         |        | No             |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |



**Volumes**

| Name  | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
|   |            |        |            |        |                |        |
| Base Volume Input [veh/h]                   | 26         | 1000   | 1061       | 15     | 7              | 18     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0              | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]                 | 26         | 1000   | 1061       | 15     | 7              | 18     |
| Peak Hour Factor                            | 0.9760     | 0.9760 | 0.9300     | 0.9300 | 0.7500         | 0.7500 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 7          | 256    | 285        | 4      | 2              | 6      |
| Total Analysis Volume [veh/h]               | 27         | 1025   | 1141       | 16     | 9              | 24     |
| Presence of On-Street Parking               | No         | No     | No         | No     | No             | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0          | 0      | 0              | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        | 0          |        | 0              |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        | 0          |        | 0              |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]                 | 0          |        | 0          |        | 0              |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|------------|------------|------------|------------|------------|------------|
| Signal Group                 | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |            |            |            |            |            |            |
| Lead / Lag                   | -          | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 0          | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 0          | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 0.0        | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 0          | 94         | 94         | 0          | 26         | 0          |
| Vehicle Extension [s]        | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0          | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0          | 0          | 14         | 0          | 15         | 0          |
| Delayed Vehicle Green [s]    | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |            | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               |            | No         | No         |            | No         |            |
| Maximum Recall               |            | No         | No         |            | No         |            |
| Pedestrian Recall            |            | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | R    | C     |
|---|------|------|------|------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           | 108  | 108  | 108  | 108  | 4     |
| g / C, Green / Cycle                    | 0.90 | 0.90 | 0.90 | 0.90 | 0.03  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.54 | 0.60 | 0.01 | 0.02  |
| s, saturation flow rate [veh/h]         | 1800 | 1900 | 1900 | 1900 | 1800  |
| c, Capacity [veh/h]                     | 1361 | 1709 | 1709 | 1709 | 61    |
| d1, Uniform Delay [s]                   | 0.61 | 1.31 | 1.51 | 0.61 | 57.02 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| d2, Incremental Delay [s]               | 0.03 | 1.56 | 2.09 | 0.01 | 7.40  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |

**Lane Group Results**

|                                       |      |       |        |      |       |
|---------------------------------------|------|-------|--------|------|-------|
| X, volume / capacity                  | 0.02 | 0.60  | 0.67   | 0.01 | 0.54  |
| d, Delay for Lane Group [s/veh]       | 0.64 | 2.88  | 3.60   | 0.62 | 64.42 |
| Lane Group LOS                        | A    | A     | A      | A    | E     |
| Critical Lane Group                   | No   | No    | Yes    | No   | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.02 | 1.75  | 2.29   | 0.01 | 1.11  |
| 50th-Percentile Queue Length [ft/ln]  | 0.56 | 43.86 | 57.21  | 0.30 | 27.75 |
| 95th-Percentile Queue Length [veh/ln] | 0.04 | 3.16  | 4.12   | 0.02 | 2.00  |
| 95th-Percentile Queue Length [ft/ln]  | 1.02 | 78.94 | 102.99 | 0.54 | 49.96 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 0.64  | 2.88 | 3.60 | 0.62 | 64.42 | 64.42 |
| Movement LOS                    | A     | A    | A    | A    | E     | E     |
| d_A, Approach Delay [s/veh]     | 2.82  |      | 3.56 |      | 64.42 |       |
| Approach LOS                    | A     |      | A    |      | E     |       |
| d_I, Intersection Delay [s/veh] | 4.11  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.663 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.48 | 0.00  | 49.48 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.674 | 0.000 | 1.804 |
| Crosswalk LOS  | B     | F     | A     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1501  | 1501  | 367   |
| d_b, Bicycle Delay [s]                                   | 3.74  | 3.74  | 39.99 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.295 | 3.469 | 1.614 |
| Bicycle LOS  | C     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 15.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.657 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐              |        |        | ⇐                |        |        | ⇐         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Curb Present                 |                |        |        | No               |        |        | No               |        |        | No        |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name  |        |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |        |        |        |                |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 0      | 0      | 0      | 632            | 0      | 502    | 0                | 1567   | 862    | 0                | 2079   | 375    |
| Base Volume Adjustment Factor               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00   | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0      | 0      | 0      | 632            | 0      | 502    | 0                | 1567   | 862    | 0                | 2079   | 375    |
| Peak Hour Factor                            | 1.0000 | 1.0000 | 1.0000 | 0.9390         | 1.0000 | 0.9390 | 1.0000           | 0.9540 | 0.9540 | 1.0000           | 0.9730 | 0.9730 |
| Other Adjustment Factor                     | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0      | 0      | 0      | 168            | 0      | 134    | 0                | 411    | 226    | 0                | 534    | 96     |
| Total Analysis Volume [veh/h]               | 0      | 0      | 0      | 673            | 0      | 535    | 0                | 1643   | 904    | 0                | 2137   | 385    |
| Presence of On-Street Parking               |        |        |        | No             |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 64    | 0       | 0     | 0       | 26      | 0       | 0       | 26      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 15      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | C    | C    |
|---|-------|-------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 24    | 24    | 24    | 58   | 58   |
| g / C, Green / Cycle                    | 0.27  | 0.27  | 0.27  | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.22  | 0.22  | 0.21  | 0.29 | 0.37 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 5700 | 5700 |
| c, Capacity [veh/h]                     | 487   | 487   | 514   | 3652 | 3652 |
| d1, Uniform Delay [s]                   | 30.81 | 30.81 | 30.35 | 8.15 | 9.28 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.66  | 3.66  | 2.68  | 0.40 | 0.69 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.83   | 0.83   | 0.78   | 0.45   | 0.59   |
| d, Delay for Lane Group [s/veh]       | 34.47  | 34.47  | 33.02  | 8.55   | 9.97   |
| Lane Group LOS                        | C      | C      | C      | A      | A      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 8.44   | 8.44   | 8.21   | 4.83   | 7.19   |
| 50th-Percentile Queue Length [ft/ln]  | 211.12 | 211.12 | 205.32 | 120.81 | 179.74 |
| 95th-Percentile Queue Length [veh/ln] | 13.21  | 13.21  | 12.91  | 8.44   | 11.59  |
| 95th-Percentile Queue Length [ft/ln]  | 330.27 | 330.27 | 322.82 | 210.94 | 289.68 |



**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|-------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 34.47 | 0.00 | 33.38 | 0.00 | 8.55 | 0.00 | 0.00 | 9.97 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |      | A    |      |      | A    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 33.99 |      |       | 8.55 |      |      | 9.97 |      |      |
| Approach LOS                    | A     |      |      | C     |      |       | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 15.32 |      |      |       |      |       |      |      |      |      |      |      |
| Intersection LOS                | B     |      |      |       |      |       |      |      |      |      |      |      |
| Intersection V/C                | 0.657 |      |      |       |      |       |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 0.000 | 2.425 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                   | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 3.553 | 2.463 | 2.735 |
| Bicycle LOS  | D     | D     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 29.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.777 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No             |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]                   | 848            | 72     | 397    | 0               | 0      | 231    | 206              | 1670   | 345    | 0                | 2186   | 46     |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 848            | 72     | 397    | 0               | 0      | 231    | 206              | 1670   | 345    | 0                | 2186   | 46     |
| Peak Hour Factor                            | 0.9490         | 0.9490 | 0.9490 | 1.0000          | 1.0000 | 0.8840 | 0.9510           | 0.9510 | 0.9510 | 1.0000           | 0.9830 | 0.9830 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 223            | 19     | 105    | 0               | 0      | 65     | 54               | 439    | 91     | 0                | 556    | 12     |
| Total Analysis Volume [veh/h]               | 894            | 76     | 418    | 0               | 0      | 261    | 217              | 1756   | 363    | 0                | 2224   | 47     |
| Presence of On-Street Parking               | No             |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0       | 6     | 6        | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0       | 30    | 30       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0     | 1.0   | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0     | 30    | 0     | 0     | 0       | 12    | 23       | 58      | 0       | 0       | 35      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 22      | 0       | 0       | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       |         | No    |          | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Maximum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Pedestrian Recall            |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | R     | L     | C     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 23    | 23    | 23    | 8     | 14    | 57    | 39    | 39    |
| g / C, Green / Cycle                    | 0.23  | 0.23  | 0.23  | 0.08  | 0.14  | 0.57  | 0.39  | 0.39  |
| (v / s)_i Volume / Saturation Flow Rate | 0.20  | 0.20  | 0.19  | 0.07  | 0.12  | 0.31  | 0.30  | 0.30  |
| s, saturation flow rate [veh/h]         | 3500  | 1800  | 1900  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 799   | 411   | 434   | 307   | 253   | 3255  | 2226  | 742   |
| d1, Uniform Delay [s]                   | 37.06 | 37.07 | 36.60 | 45.43 | 42.04 | 13.31 | 26.53 | 26.53 |
| k, delay calibration                    | 0.11  | 0.20  | 0.17  | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 2.77  | 9.01  | 5.72  | 6.57  | 8.15  | 0.65  | 2.57  | 7.40  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.86   | 0.86   | 0.81   | 0.85   | 0.86   | 0.54   | 0.77   | 0.77   |
| d, Delay for Lane Group [s/veh]       | 39.83  | 46.08  | 42.32  | 52.01  | 50.18  | 13.96  | 29.11  | 33.93  |
| Lane Group LOS                        | D      | D      | D      | D      | D      | B      | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 8.19   | 9.14   | 8.70   | 3.46   | 5.76   | 7.86   | 11.92  | 12.91  |
| 50th-Percentile Queue Length [ft/ln]  | 204.64 | 228.61 | 217.57 | 86.45  | 143.95 | 196.38 | 298.00 | 322.84 |
| 95th-Percentile Queue Length [veh/ln] | 12.88  | 14.10  | 13.54  | 6.22   | 9.69   | 12.45  | 17.58  | 18.81  |
| 95th-Percentile Queue Length [ft/ln]  | 321.94 | 352.60 | 338.52 | 155.61 | 242.34 | 311.29 | 439.56 | 470.17 |

**Movement, Approach, & Intersection Results**

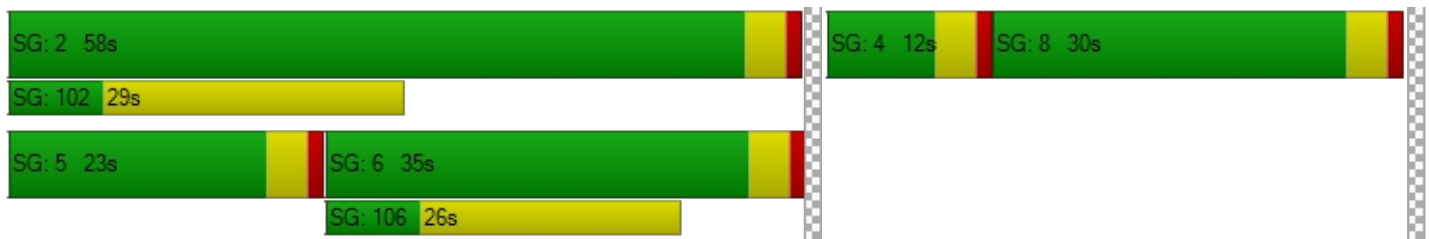
|                                 |       |       |       |       |      |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 41.26 | 46.08 | 42.96 | 0.00  | 0.00 | 52.01 | 50.18 | 13.96 | 0.00 | 0.00  | 30.24 | 33.93 |
| Movement LOS                    | D     | D     | D     |       |      | D     | D     | B     |      |       | C     | C     |
| d_A, Approach Delay [s/veh]     | 42.05 |       |       | 52.01 |      |       | 17.94 |       |      | 30.31 |       |       |
| Approach LOS                    | D     |       |       | D     |      |       | B     |       |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 29.89 |       |       |       |      |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |      |       |       |       |      |       |       |       |
| Intersection V/C                | 0.777 |       |       |       |      |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 39.64 | 39.64 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.575 | 2.140 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 520   | 160   | 1079  | 620   |
| d_b, Bicycle Delay [s]                                   | 27.41 | 42.35 | 10.60 | 23.84 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.850 | 1.560 | 2.645 | 2.496 |
| Bicycle LOS  | D     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 39.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.829 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                 |        |        | No                 |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   | 205                | 247    | 80     | 278                | 333    | 212    | 240              | 1697   | 132    | 167              | 1597   | 163    |
| Base Volume Input [veh/h]                   | 205                | 247    | 80     | 278                | 333    | 212    | 240              | 1697   | 132    | 167              | 1597   | 163    |
| Base Volume Adjustment Factor               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 205                | 247    | 80     | 278                | 333    | 212    | 240              | 1697   | 132    | 167              | 1597   | 163    |
| Peak Hour Factor                            | 0.9100             | 0.9100 | 0.9100 | 0.8290             | 0.8290 | 0.8290 | 0.9480           | 0.9480 | 0.9480 | 0.9350           | 0.9350 | 0.9350 |
| Other Adjustment Factor                     | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 56                 | 68     | 22     | 84                 | 100    | 64     | 63               | 448    | 35     | 45               | 427    | 44     |
| Total Analysis Volume [veh/h]               | 225                | 271    | 88     | 335                | 402    | 256    | 253              | 1790   | 139    | 179              | 1708   | 174    |
| Presence of On-Street Parking               | No                 |        | No     | No                 |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 13       | 39      | 0       | 17       | 43      | 0       | 23       | 47      | 0       | 17       | 41      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 29      | 0       | 0        | 26      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 9     | 24    | 24    | 13    | 28    | 28    | 19    | 54    | 54    | 13    | 48    | 48    |
| g / C, Green / Cycle                    | 0.08  | 0.20  | 0.20  | 0.11  | 0.23  | 0.23  | 0.16  | 0.45  | 0.45  | 0.11  | 0.40  | 0.40  |
| (v / s)_i Volume / Saturation Flow Rate | 0.06  | 0.10  | 0.09  | 0.10  | 0.21  | 0.13  | 0.14  | 0.34  | 0.34  | 0.10  | 0.25  | 0.25  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  | 1800  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 265   | 382   | 382   | 381   | 445   | 445   | 280   | 1702  | 851   | 196   | 2287  | 762   |
| d1, Uniform Delay [s]                   | 54.82 | 42.47 | 42.14 | 52.72 | 44.64 | 40.67 | 49.82 | 27.56 | 27.86 | 52.94 | 28.52 | 28.85 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.20  | 0.11  | 0.13  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 7.48  | 0.96  | 0.84  | 6.64  | 12.01 | 1.17  | 12.24 | 3.09  | 6.53  | 15.13 | 1.23  | 3.98  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.85   | 0.49   | 0.45   | 0.88   | 0.90   | 0.57   | 0.90   | 0.75   | 0.77   | 0.91   | 0.61   | 0.63   |
| d, Delay for Lane Group [s/veh]       | 62.30  | 43.43  | 42.98  | 59.36  | 56.64  | 41.85  | 62.06  | 30.65  | 34.39  | 68.07  | 29.75  | 32.84  |
| Lane Group LOS                        | E      | D      | D      | E      | E      | D      | E      | C      | C      | E      | C      | C      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.64   | 5.00   | 4.61   | 5.32   | 13.03  | 6.85   | 8.39   | 15.64  | 16.94  | 6.16   | 10.80  | 11.89  |
| 50th-Percentile Queue Length [ft/ln]  | 90.88  | 125.01 | 115.24 | 133.06 | 325.78 | 171.13 | 209.84 | 390.97 | 423.44 | 153.95 | 270.12 | 297.32 |
| 95th-Percentile Queue Length [veh/ln] | 6.54   | 8.67   | 8.13   | 9.11   | 18.95  | 11.14  | 13.15  | 22.12  | 23.69  | 10.23  | 16.20  | 17.55  |
| 95th-Percentile Queue Length [ft/ln]  | 163.58 | 216.69 | 203.26 | 227.64 | 473.79 | 278.40 | 328.63 | 553.11 | 592.18 | 255.69 | 404.89 | 438.71 |

**Movement, Approach, & Intersection Results**

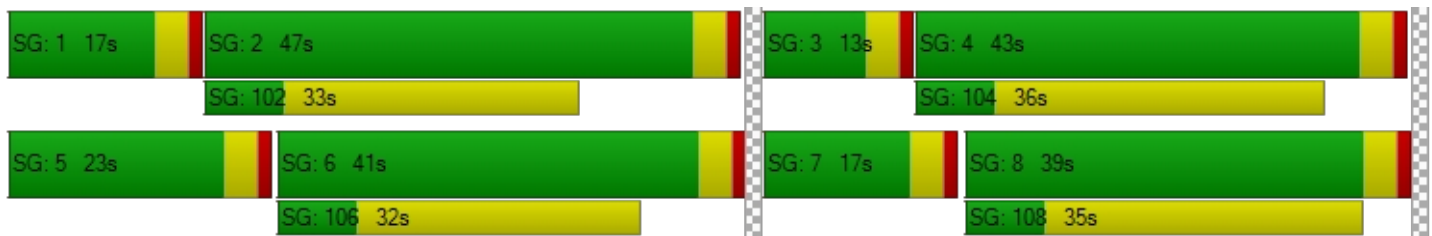
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 62.30 | 43.29 | 42.98 | 59.36 | 56.64 | 41.85 | 62.06 | 31.72 | 34.39 | 68.07 | 30.31 | 32.84 |
| Movement LOS                    | E     | D     | D     | E     | E     | D     | E     | C     | C     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 50.57 |       |       | 53.74 |       |       | 35.41 |       |       | 33.80 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | D     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 39.49 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.829 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.568 |  |  | 2.741 |  |  | 3.272 |  |  | 3.260 |  |  |
| Crosswalk LOS  | B     |  |  | B     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 583   |  |  | 650   |  |  | 716   |  |  | 617   |  |  |
| d_b, Bicycle Delay [s]                                   | 30.12 |  |  | 27.35 |  |  | 24.72 |  |  | 28.72 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.041 |  |  | 3.198 |  |  | 2.760 |  |  | 2.410 |  |  |
| Bicycle LOS  | B     |  |  | C     |  |  | C     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.764 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐              |        |        | ⇐⇐              |        |        | ⇐   ⇐            |        |        | ⇐   ⇐            |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No               |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name  | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 225              | 45     | 253    | 24              | 22     | 13     | 18               | 1713   | 263    | 219              | 1764   | 54     |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 225              | 45     | 253    | 24              | 22     | 13     | 18               | 1713   | 263    | 219              | 1764   | 54     |
| Peak Hour Factor                            | 0.8580           | 0.8580 | 0.8580 | 0.6480          | 0.6480 | 0.6480 | 0.9520           | 0.9520 | 0.9520 | 0.9460           | 0.9460 | 0.9460 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 66               | 13     | 74     | 9               | 8      | 5      | 5                | 450    | 69     | 58               | 466    | 14     |
| Total Analysis Volume [veh/h]               | 262              | 52     | 295    | 37              | 34     | 20     | 19               | 1799   | 276    | 232              | 1865   | 57     |
| Presence of On-Street Parking               | No               |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 26    | 0     | 0     | 10    | 0     | 10       | 32      | 0       | 22       | 44      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0        | 21      | 0       | 0        | 14      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 17    | 17    | 17    | 5     | 5     | 2     | 38    | 38    | 14    | 50    | 50    |
| g / C, Green / Cycle                    | 0.18  | 0.18  | 0.18  | 0.06  | 0.06  | 0.03  | 0.43  | 0.43  | 0.15  | 0.55  | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.09  | 0.16  | 0.02  | 0.03  | 0.01  | 0.32  | 0.15  | 0.13  | 0.33  | 0.35  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 1800  | 1900  | 1800  | 5700  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 331   | 331   | 349   | 110   | 116   | 48    | 2431  | 810   | 272   | 2094  | 1047  |
| d1, Uniform Delay [s]                   | 32.88 | 32.93 | 35.56 | 40.59 | 40.92 | 43.18 | 21.67 | 17.35 | 37.28 | 13.62 | 13.88 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.04  | 1.07  | 5.60  | 1.79  | 2.90  | 5.23  | 2.07  | 1.14  | 7.39  | 1.30  | 2.84  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.47   | 0.48   | 0.84   | 0.34  | 0.47  | 0.40  | 0.74   | 0.34   | 0.85   | 0.60   | 0.63   |
| d, Delay for Lane Group [s/veh]       | 33.92  | 34.00  | 41.16  | 42.39 | 43.82 | 48.40 | 23.74  | 18.50  | 44.67  | 14.92  | 16.73  |
| Lane Group LOS                        | C      | C      | D      | D     | D     | D     | C      | B      | D      | B      | B      |
| Critical Lane Group                   | No     | No     | Yes    | No    | Yes   | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.09   | 3.14   | 6.67   | 0.83  | 1.24  | 0.48  | 10.50  | 3.95   | 5.45   | 8.27   | 9.18   |
| 50th-Percentile Queue Length [ft/ln]  | 77.19  | 78.48  | 166.68 | 20.85 | 30.99 | 12.06 | 262.43 | 98.85  | 136.28 | 206.87 | 229.58 |
| 95th-Percentile Queue Length [veh/ln] | 5.56   | 5.65   | 10.90  | 1.50  | 2.23  | 0.87  | 15.81  | 7.12   | 9.28   | 12.99  | 14.15  |
| 95th-Percentile Queue Length [ft/ln]  | 138.94 | 141.26 | 272.55 | 37.53 | 55.79 | 21.70 | 395.26 | 177.93 | 232.01 | 324.81 | 353.82 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 33.95 | 34.00 | 41.16 | 42.39 | 43.82 | 43.82 | 48.40 | 23.74 | 18.50 | 44.67 | 15.50 | 16.73 |
| Movement LOS                    | C     | C     | D     | D     | D     | D     | D     | C     | B     | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 37.45 |       |       | 43.24 |       |       | 23.28 |       |       | 18.68 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | B     |       |       |
| d_I, Intersection Delay [s/veh] | 23.38 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.764 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.72 | 34.72 | 0.00  | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.411 | 2.011 | 0.000 | 3.190 |
| Crosswalk LOS  | B     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 488   | 133   | 622   | 888   |
| d_b, Bicycle Delay [s]                                   | 25.73 | 39.24 | 21.40 | 13.92 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.564 | 1.710 | 2.711 | 2.744 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 32.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.803 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                   |        |        |                   |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 338               | 580    | 97     | 251               | 445    | 107    | 202              | 1272   | 198    | 174              | 1406   | 303    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 338               | 580    | 97     | 251               | 445    | 107    | 202              | 1272   | 198    | 174              | 1406   | 303    |
| Peak Hour Factor                            | 0.9600            | 0.9600 | 0.9600 | 0.8590            | 0.8590 | 0.8590 | 0.9620           | 0.9620 | 0.9620 | 0.9050           | 0.9050 | 0.9050 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 88                | 151    | 25     | 73                | 130    | 31     | 52               | 331    | 51     | 48               | 388    | 84     |
| Total Analysis Volume [veh/h]               | 352               | 604    | 101    | 292               | 518    | 125    | 210              | 1322   | 206    | 192              | 1554   | 335    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |                   | 0      |        |                   | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 15       | 32      | 0       | 13       | 30      | 0       | 11       | 40      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 19      | 0       | 0        | 19      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 11    | 21    | 21    | 9     | 19    | 19    | 7     | 43    | 43    | 6     | 42    | 42    |
| g / C, Green / Cycle                    | 0.12  | 0.22  | 0.22  | 0.10  | 0.20  | 0.20  | 0.07  | 0.45  | 0.45  | 0.06  | 0.44  | 0.44  |
| (v / s)_i Volume / Saturation Flow Rate | 0.10  | 0.19  | 0.18  | 0.08  | 0.14  | 0.07  | 0.06  | 0.27  | 0.26  | 0.05  | 0.33  | 0.33  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 409   | 416   | 416   | 336   | 753   | 377   | 264   | 1718  | 859   | 227   | 1678  | 839   |
| d1, Uniform Delay [s]                   | 41.32 | 35.89 | 35.49 | 42.48 | 35.47 | 32.79 | 43.35 | 19.59 | 19.47 | 44.09 | 22.32 | 22.04 |
| k, delay calibration                    | 0.11  | 0.16  | 0.14  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.37  | 8.04  | 5.31  | 6.81  | 1.13  | 0.51  | 5.45  | 1.54  | 2.92  | 8.34  | 3.24  | 5.74  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.86   | 0.87   | 0.83   | 0.87   | 0.69   | 0.33   | 0.80   | 0.60   | 0.59   | 0.85   | 0.76   | 0.74   |
| d, Delay for Lane Group [s/veh]       | 46.69  | 43.93  | 40.80  | 49.29  | 36.60  | 33.31  | 48.80  | 21.13  | 22.39  | 52.43  | 25.56  | 27.78  |
| Lane Group LOS                        | D      | D      | D      | D      | D      | C      | D      | C      | C      | D      | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | No     | No     | Yes    | No     | No     | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.31   | 8.86   | 8.07   | 3.67   | 5.61   | 2.50   | 2.61   | 8.48   | 8.61   | 2.48   | 12.05  | 12.20  |
| 50th-Percentile Queue Length [ft/ln]  | 107.79 | 221.42 | 201.70 | 91.69  | 140.29 | 62.62  | 65.25  | 211.90 | 215.20 | 62.08  | 301.18 | 304.96 |
| 95th-Percentile Queue Length [veh/ln] | 7.72   | 13.74  | 12.73  | 6.60   | 9.50   | 4.51   | 4.70   | 13.25  | 13.42  | 4.47   | 17.74  | 17.93  |
| 95th-Percentile Queue Length [ft/ln]  | 192.93 | 343.43 | 318.15 | 165.03 | 237.42 | 112.72 | 117.46 | 331.27 | 335.50 | 111.74 | 443.49 | 448.16 |

**Movement, Approach, & Intersection Results**

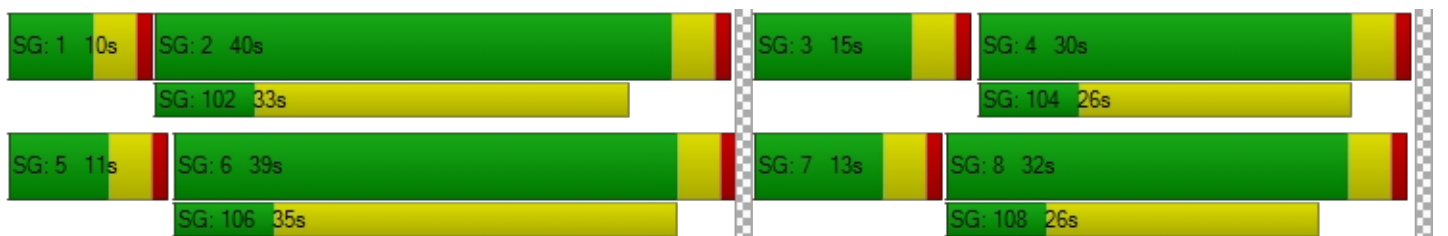
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 46.69 | 42.67 | 40.80 | 49.29 | 36.60 | 33.31 | 48.80 | 21.41 | 22.39 | 52.43 | 25.97 | 27.78 |
| Movement LOS                    | D     | D     | D     | D     | D     | C     | D     | C     | C     | D     | C     | C     |
| d_A, Approach Delay [s/veh]     | 43.83 |       |       | 40.12 |       |       | 24.84 |       |       | 28.70 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 32.14 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.803 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.22 | 37.22 | 37.22 | 37.22 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.776 | 2.887 | 3.187 | 3.190 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 588   | 546   | 757   | 736   |
| d_b, Bicycle Delay [s]                                   | 23.70 | 25.13 | 18.39 | 19.02 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.432 | 2.331 | 2.516 | 2.704 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.576 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   | 103             | 227    | 121    | 196             | 190    | 122    | 216              | 1638   | 134    | 158              | 1204   | 118    |
| Base Volume Input [veh/h]                   | 103             | 227    | 121    | 196             | 190    | 122    | 216              | 1638   | 134    | 158              | 1204   | 118    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 103             | 227    | 121    | 196             | 190    | 122    | 216              | 1638   | 134    | 158              | 1204   | 118    |
| Peak Hour Factor                            | 0.8810          | 0.8810 | 0.8810 | 0.8480          | 0.8480 | 0.8480 | 0.9420           | 0.9420 | 0.9420 | 0.8590           | 0.8590 | 0.8590 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 29              | 64     | 34     | 58              | 56     | 36     | 57               | 435    | 36     | 46               | 350    | 34     |
| Total Analysis Volume [veh/h]               | 117             | 258    | 137    | 231             | 224    | 144    | 229              | 1739   | 142    | 184              | 1402   | 137    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 13       | 46      | 0       | 15       | 48      | 0       | 15       | 42      | 0       | 12       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 35      | 0       | 0        | 37      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115  | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 11    | 11    | 10    | 15    | 15    | 10    | 70    | 70   | 8     | 69    | 69    |
| g / C, Green / Cycle                    | 0.05  | 0.10  | 0.10  | 0.08  | 0.13  | 0.13  | 0.08  | 0.61  | 0.61 | 0.07  | 0.60  | 0.60  |
| (v / s)_i Volume / Saturation Flow Rate | 0.03  | 0.07  | 0.07  | 0.07  | 0.06  | 0.08  | 0.07  | 0.31  | 0.07 | 0.05  | 0.25  | 0.07  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 5700  | 1900 | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 181   | 365   | 182   | 293   | 486   | 243   | 291   | 3487  | 1162 | 244   | 3410  | 1137  |
| d1, Uniform Delay [s]                   | 53.53 | 50.45 | 50.68 | 51.73 | 46.51 | 47.35 | 51.76 | 12.48 | 9.37 | 52.58 | 12.32 | 10.01 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 3.83  | 2.53  | 6.11  | 4.73  | 0.68  | 2.30  | 4.71  | 0.51  | 0.22 | 4.73  | 0.37  | 0.22  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |        |        |        |        |        |       |        |        |       |
|---------------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|
| X, volume / capacity                  | 0.65  | 0.71   | 0.75   | 0.79   | 0.46   | 0.59   | 0.79   | 0.50   | 0.12  | 0.76   | 0.41   | 0.12  |
| d, Delay for Lane Group [s/veh]       | 57.36 | 52.99  | 56.80  | 56.45  | 47.19  | 49.65  | 56.47  | 12.99  | 9.59  | 57.31  | 12.69  | 10.23 |
| Lane Group LOS                        | E     | D      | E      | E      | D      | D      | E      | B      | A     | E      | B      | B     |
| Critical Lane Group                   | No    | No     | Yes    | Yes    | No     | No     | No     | Yes    | No    | Yes    | No     | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.76  | 3.73   | 4.15   | 3.46   | 3.02   | 4.05   | 3.43   | 8.08   | 1.53  | 2.77   | 6.27   | 1.53  |
| 50th-Percentile Queue Length [ft/ln]  | 43.91 | 93.21  | 103.76 | 86.45  | 75.51  | 101.22 | 85.70  | 202.12 | 38.16 | 69.20  | 156.73 | 38.36 |
| 95th-Percentile Queue Length [veh/ln] | 3.16  | 6.71   | 7.47   | 6.22   | 5.44   | 7.29   | 6.17   | 12.75  | 2.75  | 4.98   | 10.38  | 2.76  |
| 95th-Percentile Queue Length [ft/ln]  | 79.04 | 167.78 | 186.77 | 155.60 | 135.92 | 182.20 | 154.25 | 318.70 | 68.70 | 124.57 | 259.39 | 69.04 |

**Movement, Approach, & Intersection Results**

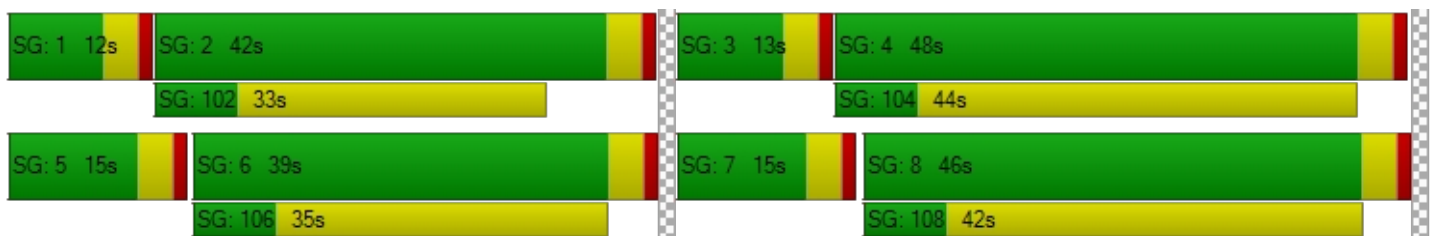
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 57.36 | 52.99 | 56.80 | 56.45 | 47.19 | 49.65 | 56.47 | 12.99 | 9.59 | 57.31 | 12.69 | 10.23 |
| Movement LOS                    | E     | D     | E     | E     | D     | D     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 55.00 |       |       | 51.35 |       |       | 17.48 |       |      | 17.26 |       |       |
| Approach LOS                    | E     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 25.39 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.576 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.754 | 2.776 | 3.270 | 3.276 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 730   | 765   | 661   | 608   |
| d_b, Bicycle Delay [s]                                   | 23.19 | 21.93 | 25.80 | 27.84 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.982 | 2.054 | 2.720 | 2.507 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 204.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.955 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |            |        |        |            |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 238        | 468    | 113    | 843        | 407    | 18     | 64               | 1587   | 263    | 147              | 1217   | 711    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 238        | 468    | 113    | 843        | 407    | 18     | 64               | 1587   | 263    | 147              | 1217   | 711    |
| Peak Hour Factor                            | 0.9240     | 0.9240 | 0.9240 | 0.9400     | 0.9400 | 0.9400 | 0.9140           | 0.9140 | 0.9140 | 0.9380           | 0.9380 | 0.9380 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 64         | 127    | 31     | 224        | 108    | 5      | 18               | 434    | 72     | 39               | 324    | 189    |
| Total Analysis Volume [veh/h]               | 258        | 506    | 122    | 897        | 433    | 19     | 70               | 1736   | 288    | 157              | 1297   | 758    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 15       | 53      | 0       | 12       | 50      | 0       | 10       | 45      | 0       | 10       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 42      | 0       | 0        | 36      | 0       | 0        | 34      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L       | C     | R     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00    | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00    | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 11    | 19    | 19    | 8       | 16    | 16    | 6     | 71    | 71    | 6     | 71    | 71    |
| g / C, Green / Cycle                    | 0.09  | 0.16  | 0.16  | 0.07    | 0.14  | 0.14  | 0.05  | 0.59  | 0.59  | 0.05  | 0.59  | 0.59  |
| (v / s)_i Volume / Saturation Flow Rate | 0.07  | 0.13  | 0.06  | 0.26    | 0.11  | 0.01  | 0.04  | 0.36  | 0.35  | 0.04  | 0.23  | 0.40  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500    | 3800  | 1900  | 1800  | 3800  | 1900  | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 315   | 604   | 302   | 236     | 518   | 259   | 91    | 2241  | 1120  | 178   | 3363  | 1121  |
| d1, Uniform Delay [s]                   | 53.68 | 48.99 | 45.38 | 55.99   | 50.53 | 45.22 | 56.31 | 15.70 | 15.61 | 56.63 | 13.07 | 16.79 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.30  | 3.19  | 0.87  | 1264.67 | 3.63  | 0.12  | 12.75 | 1.22  | 2.36  | 13.28 | 0.34  | 3.28  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |       |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|-------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.82   | 0.84   | 0.40   | 3.81    | 0.84   | 0.07  | 0.77   | 0.60   | 0.60   | 0.88   | 0.39   | 0.68   |
| d, Delay for Lane Group [s/veh]       | 58.98  | 52.18  | 46.25  | 1320.66 | 54.16  | 45.34 | 69.06  | 16.92  | 17.97  | 69.91  | 13.40  | 20.07  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D     | E      | B      | B      | E      | B      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes     | No     | No    | Yes    | No     | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 4.06   | 7.61   | 3.35   | 44.97   | 6.59   | 0.51  | 2.42   | 11.71  | 11.88  | 2.69   | 6.13   | 14.59  |
| 50th-Percentile Queue Length [ft/ln]  | 101.43 | 190.29 | 83.84  | 1124.25 | 164.84 | 12.65 | 60.46  | 292.65 | 296.95 | 67.32  | 153.18 | 364.80 |
| 95th-Percentile Queue Length [veh/ln] | 7.30   | 12.14  | 6.04   | 68.37   | 10.80  | 0.91  | 4.35   | 17.32  | 17.53  | 4.85   | 10.19  | 20.86  |
| 95th-Percentile Queue Length [ft/ln]  | 182.57 | 303.40 | 150.91 | 1709.37 | 270.12 | 22.77 | 108.83 | 432.93 | 438.26 | 121.18 | 254.67 | 521.42 |

**Movement, Approach, & Intersection Results**

|                                 |        |       |       |         |       |       |       |       |       |       |       |       |
|---------------------------------|--------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 58.98  | 52.18 | 46.25 | 1320.66 | 54.16 | 45.34 | 69.06 | 17.15 | 17.97 | 69.91 | 13.40 | 20.07 |
| Movement LOS                    | E      | D     | D     | F       | D     | D     | E     | B     | B     | E     | B     | C     |
| d_A, Approach Delay [s/veh]     | 53.34  |       |       | 896.18  |       |       | 19.00 |       |       | 19.70 |       |       |
| Approach LOS                    | D      |       |       | F       |       |       | B     |       |       | B     |       |       |
| d_I, Intersection Delay [s/veh] | 204.79 |       |       |         |       |       |       |       |       |       |       |       |
| Intersection LOS                | F      |       |       |         |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.955  |       |       |         |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.853 |  |  | 2.981 |  |  | 3.119 |  |  | 3.401 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 816   |  |  | 766   |  |  | 683   |  |  | 683   |  |  |
| d_b, Bicycle Delay [s]                                   | 21.02 |  |  | 22.83 |  |  | 26.02 |  |  | 26.02 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.291 |  |  | 2.673 |  |  | 2.711 |  |  | 2.776 |  |  |
| Bicycle LOS  | B     |  |  | B     |  |  | B     |  |  | C     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



*APPENDIX D-II*

**YEAR 2035 CUMULATIVE TRAFFIC CONDITIONS**



**Intersection Level Of Service Report**

**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 38.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.855 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                         |        |        |                         |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 185                     | 238    | 225    | 963                     | 659    | 9      | 15           | 1511   | 230    | 517          | 1929   | 597    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 185                     | 238    | 225    | 963                     | 659    | 9      | 15           | 1511   | 230    | 517          | 1929   | 597    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 46                      | 60     | 56     | 241                     | 165    | 2      | 4            | 378    | 58     | 129          | 482    | 149    |
| Total Analysis Volume [veh/h]               | 185                     | 238    | 225    | 963                     | 659    | 9      | 15           | 1511   | 230    | 517          | 1929   | 597    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 12       | 15      | 0       | 41       | 44      | 0       | 10       | 40      | 0       | 24       | 54      | 54      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 0       | 0       | 0        | 33      | 0       | 0        | 28      | 0       | 0        | 22      | 22      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C     | C     | L     | C     | C     | L     | C     | R    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 |
| g_i, Effective Green Time [s]           | 8     | 12    | 12    | 12    | 36    | 40    | 40    | 2     | 36    | 36    | 20    | 54    | 93   |
| g / C, Green / Cycle                    | 0.07  | 0.10  | 0.10  | 0.10  | 0.30  | 0.33  | 0.33  | 0.02  | 0.30  | 0.30  | 0.16  | 0.45  | 0.78 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05  | 0.09  | 0.08  | 0.08  | 0.28  | 0.18  | 0.18  | 0.00  | 0.23  | 0.23  | 0.15  | 0.34  | 0.31 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 5700  | 1900  | 3500  | 5700  | 1900 |
| c, Capacity [veh/h]                     | 236   | 194   | 194   | 194   | 1042  | 632   | 632   | 72    | 1730  | 577   | 571   | 2543  | 1477 |
| d1, Uniform Delay [s]                   | 55.13 | 53.01 | 52.63 | 52.34 | 40.84 | 32.44 | 32.42 | 57.83 | 37.75 | 37.85 | 49.32 | 27.84 | 4.35 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               | 5.68  | 10.19 | 6.98  | 5.42  | 4.05  | 0.71  | 0.70  | 1.41  | 3.09  | 9.11  | 5.73  | 2.18  | 0.82 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |        |        |        |       |        |        |        |        |        |
|---------------------------------------|-------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.78  | 0.85  | 0.79  | 0.74  | 0.92   | 0.53   | 0.53   | 0.21  | 0.75   | 0.76   | 0.91   | 0.76   | 0.40   |
| d, Delay for Lane Group [s/veh]       | 60.82 | 63.21 | 59.60 | 57.75 | 44.89  | 33.15  | 33.13  | 59.24 | 40.84  | 46.96  | 55.06  | 30.03  | 5.17   |
| Lane Group LOS                        | E     | E     | E     | E     | D      | C      | C      | E     | D      | D      | E      | C      | A      |
| Critical Lane Group                   | No    | Yes   | No    | No    | Yes    | No     | No     | No    | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.94  | 5.47  | 4.89  | 4.49  | 14.22  | 7.98   | 7.96   | 0.24  | 11.94  | 13.03  | 8.04   | 15.64  | 4.28   |
| 50th-Percentile Queue Length [ft/ln]  | 73.56 | 136.8 | 122.2 | 112.3 | 355.62 | 199.57 | 198.91 | 5.96  | 298.48 | 325.83 | 201.11 | 391.04 | 106.98 |
| 95th-Percentile Queue Length [veh/ln] | 5.30  | 9.31  | 8.51  | 7.97  | 20.41  | 12.62  | 12.58  | 0.43  | 17.61  | 18.95  | 12.70  | 22.13  | 7.67   |
| 95th-Percentile Queue Length [ft/ln]  | 132.4 | 232.7 | 212.8 | 199.2 | 510.25 | 315.41 | 314.56 | 10.73 | 440.15 | 473.84 | 317.39 | 553.20 | 191.80 |

**Movement, Approach, & Intersection Results**

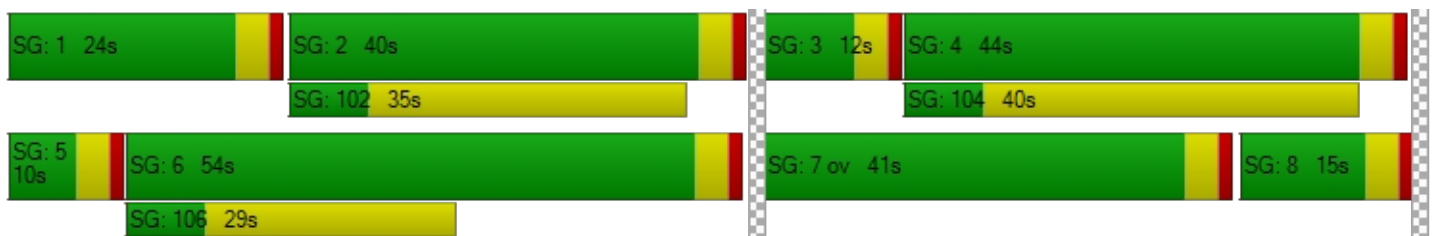
|                                 |       |       |       |       |       |       |       |       |       |       |       |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 60.82 | 62.12 | 58.36 | 44.89 | 33.14 | 33.13 | 59.24 | 41.68 | 46.96 | 55.06 | 30.03 | 5.17 |
| Movement LOS                    | E     | E     | E     | D     | C     | C     | E     | D     | D     | E     | C     | A    |
| d_A, Approach Delay [s/veh]     | 60.46 |       |       | 40.08 |       |       | 42.52 |       |       | 29.40 |       |      |
| Approach LOS                    | E     |       |       | D     |       |       | D     |       |       | C     |       |      |
| d_I, Intersection Delay [s/veh] | 37.96 |       |       |       |       |       |       |       |       |       |       |      |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |      |
| Intersection V/C                | 0.855 |       |       |       |       |       |       |       |       |       |       |      |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 0.0   |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 0.00  |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.894 |  |  | 2.870 |  |  | 3.283 |  |  | 0.000 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | C     |  |  | F     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 183   |  |  | 666   |  |  | 600   |  |  | 833   |  |  |
| d_b, Bicycle Delay [s]                                   | 49.52 |  |  | 26.68 |  |  | 29.41 |  |  | 20.43 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.094 |  |  | 2.905 |  |  | 2.284 |  |  | 3.233 |  |  |
| Bicycle LOS  | B     |  |  | C     |  |  | B     |  |  | C     |  |  |

**Sequence**




|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.798 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps  |        |        | Lambert Road  |        |        | Lambert Road  |        |        |
|------------------------------|----------------|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound     |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |                |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1   | 0      | 1      | 0   | 0      | 1      | 1   | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 |                |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes            |        |        | Yes   |        |        | No  |        |        | No  |        |        |

**Volumes**

| Name  | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 0              | 0      | 0      | 1045           | 0      | 695    | 0            | 1855   | 619    | 256          | 2169   | 0      |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0              | 0      | 0      | 1045           | 0      | 695    | 0            | 1855   | 619    | 256          | 2169   | 0      |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0              | 0      | 0      | 261            | 0      | 174    | 0            | 464    | 155    | 64           | 542    | 0      |
| Total Analysis Volume [veh/h]               | 0              | 0      | 0      | 1045           | 0      | 695    | 0            | 1855   | 619    | 256          | 2169   | 0      |
| Presence of On-Street Parking               |                |        |        | No             |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 59    | 0       | 0     | 0       | 23      | 0       | 13       | 36      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 12      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              |  | L     | R     | C     | R     | L     | C     |
|---|--|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     |  | 95    | 95    | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           |  | 34    | 34    | 40    | 40    | 9     | 53    |
| g / C, Green / Cycle                    |  | 0.36  | 0.36  | 0.42  | 0.42  | 0.09  | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.30  | 0.18  | 0.33  | 0.16  | 0.07  | 0.38  |
| s, saturation flow rate [veh/h]         |  | 3500  | 3800  | 5700  | 3800  | 3500  | 5700  |
| c, Capacity [veh/h]                     |  | 1268  | 1377  | 2383  | 1588  | 327   | 3154  |
| d1, Uniform Delay [s]                   |  | 27.54 | 23.64 | 23.86 | 19.23 | 42.14 | 15.30 |
| k, delay calibration                    |  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  |
| l, Upstream Filtering Factor            |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               |  | 1.41  | 0.29  | 2.59  | 0.72  | 4.14  | 1.24  |
| d3, Initial Queue Delay [s]             |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |  |        |        |        |        |        |        |
|---------------------------------------|--|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  |  | 0.82   | 0.50   | 0.78   | 0.39   | 0.78   | 0.69   |
| d, Delay for Lane Group [s/veh]       |  | 28.95  | 23.93  | 26.45  | 19.95  | 46.28  | 16.54  |
| Lane Group LOS                        |  | C      | C      | C      | B      | D      | B      |
| Critical Lane Group                   |  | Yes    | No     | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] |  | 10.64  | 5.99   | 12.00  | 4.77   | 3.10   | 10.75  |
| 50th-Percentile Queue Length [ft/ln]  |  | 265.91 | 149.64 | 299.97 | 119.21 | 77.38  | 268.81 |
| 95th-Percentile Queue Length [veh/ln] |  | 15.98  | 10.00  | 17.68  | 8.35   | 5.57   | 16.13  |
| 95th-Percentile Queue Length [ft/ln]  |  | 399.62 | 249.95 | 441.99 | 208.75 | 139.29 | 403.25 |

**Movement, Approach, & Intersection Results**

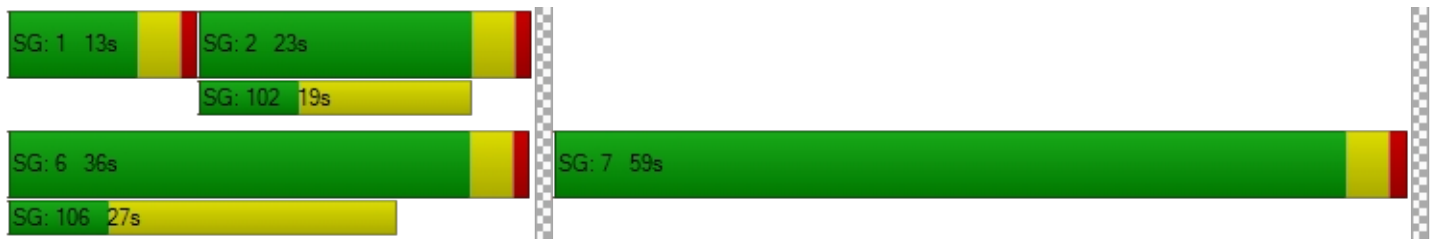
|                                 |       |      |      |       |      |       |       |       |       |       |       |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 28.95 | 0.00 | 23.93 | 0.00  | 26.45 | 19.95 | 46.28 | 16.54 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | C     | B     | D     | B     |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 26.94 |      |       | 24.82 |       |       | 19.68 |       |      |
| Approach LOS                    | A     |      |      | C     |      |       | C     |       |       | B     |       |      |
| d_I, Intersection Delay [s/veh] | 23.50 |      |      |       |      |       |       |       |       |       |       |      |
| Intersection LOS                | C     |      |      |       |      |       |       |       |       |       |       |      |
| Intersection V/C                | 0.798 |      |      |       |      |       |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.14 | 37.14 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.144 | 2.557 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1158  | 400   | 674   |
| d_b, Bicycle Delay [s]                                   | 47.51 | 8.43  | 30.41 | 20.90 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 1.560 | 2.920 | 2.893 |
| Bicycle LOS  | D     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 19.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.812 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐            |        |        |                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No             |        |        |                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 1051           | 0      | 506    | 0              | 0      | 0      | 0            | 2505   | 404    | 0            | 1386   | 487    |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 1051           | 0      | 506    | 0              | 0      | 0      | 0            | 2505   | 404    | 0            | 1386   | 487    |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]              | 263            | 0      | 127    | 0              | 0      | 0      | 0            | 626    | 101    | 0            | 347    | 0      |
| Total Analysis Volume [veh/h]               | 1051           | 0      | 506    | 0              | 0      | 0      | 0            | 2505   | 404    | 0            | 1386   | 0      |
| Presence of On-Street Parking               | No             |        | No     |                |        |        | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Split | Permiss | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Unsigna |
|------------------------------|-------|---------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 3     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |         |       |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag                   | Lead  | -       | -     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 6     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 30    | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 54    | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 36      | 0       | 0       | 36      | 0       |
| Vehicle Extension [s]        | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 7       | 0       | 0       | 0       | 0       |
| Pedestrian Clearance [s]     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 25      | 0       | 0       | 0       | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Maximum Recall               | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Pedestrian Recall            | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | R     |  | C     | C     | R     | C     |
|---|-------|-------|--|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    |  | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 32    | 32    |  | 50    | 50    | 50    | 50    |
| g / C, Green / Cycle                    | 0.36  | 0.36  |  | 0.55  | 0.55  | 0.55  | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate | 0.30  | 0.27  |  | 0.44  | 0.44  | 0.21  | 0.24  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 3800  | 1900  | 1900  | 5700  |
| c, Capacity [veh/h]                     | 1252  | 680   |  | 2102  | 1051  | 1051  | 3154  |
| d1, Uniform Delay [s]                   | 26.48 | 25.26 |  | 15.99 | 15.99 | 11.38 | 11.84 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.50  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.59  | 1.64  |  | 3.20  | 6.20  | 1.06  | 0.45  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |  |        |        |        |        |
|---------------------------------------|--------|--------|--|--------|--------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.74   |  | 0.79   | 0.79   | 0.38   | 0.44   |
| d, Delay for Lane Group [s/veh]       | 28.07  | 26.90  |  | 19.19  | 22.19  | 12.45  | 12.29  |
| Lane Group LOS                        | C      | C      |  | B      | C      | B      | B      |
| Critical Lane Group                   | Yes    | No     |  | Yes    | No     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 10.15  | 9.38   |  | 13.28  | 14.15  | 4.56   | 5.19   |
| 50th-Percentile Queue Length [ft/ln]  | 253.70 | 234.39 |  | 331.91 | 353.83 | 114.06 | 129.71 |
| 95th-Percentile Queue Length [veh/ln] | 15.37  | 14.40  |  | 19.25  | 20.32  | 8.07   | 8.92   |
| 95th-Percentile Queue Length [ft/ln]  | 384.31 | 359.93 |  | 481.31 | 508.07 | 201.64 | 223.10 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |      |      |       |       |       |       |       |      |
|---------------------------------|-------|------|-------|------|------|------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 28.07 | 0.00 | 26.90 | 0.00 | 0.00 | 0.00 | 0.00  | 19.87 | 12.45 | 0.00  | 12.29 | 0.00 |
| Movement LOS                    | C     |      | C     |      |      |      |       | B     | B     |       | B     |      |
| d_A, Approach Delay [s/veh]     | 27.69 |      |       | 0.00 |      |      | 19.11 |       |       | 12.29 |       |      |
| Approach LOS                    | C     |      |       | A    |      |      | B     |       |       | B     |       |      |
| d_I, Intersection Delay [s/veh] | 19.78 |      |       |      |      |      |       |       |       |       |       |      |
| Intersection LOS                | B     |      |       |      |      |      |       |       |       |       |       |      |
| Intersection V/C                | 0.812 |      |       |      |      |      |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.63 | 0.00  | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.682 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | F     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1112  | 0     | 712   | 712   |
| d_b, Bicycle Delay [s]                                   | 8.86  | 44.96 | 18.65 | 18.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.560 | 4.132 | 3.160 | 2.322 |
| Bicycle LOS  | A     | D     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 13.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.636 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | +            |        |        | +            |        |        | +            |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No           |        |        | No           |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |



**Volumes**

| Name  | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 9            | 8      | 7      | 66           | 1      | 130    | 557          | 2469   | 40     | 17           | 1907   | 183    |
| Base Volume Input [veh/h]                   | 9            | 8      | 7      | 66           | 1      | 130    | 557          | 2469   | 40     | 17           | 1907   | 183    |
| Base Volume Adjustment Factor               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 9            | 8      | 7      | 66           | 1      | 130    | 557          | 2469   | 40     | 17           | 1907   | 183    |
| Peak Hour Factor                            | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 2            | 2      | 2      | 17           | 0      | 33     | 139          | 617    | 10     | 4            | 477    | 46     |
| Total Analysis Volume [veh/h]               | 9            | 8      | 7      | 66           | 1      | 130    | 557          | 2469   | 40     | 17           | 1907   | 183    |
| Presence of On-Street Parking               | No           |        | No     | No           |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |              | 0      |        |              | 0      |        |              | 0      |        |              | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |              | 0      |        |              | 0      |        |              | 0      |        |              | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |              | 0      |        |              | 0      |        |              | 0      |        |              | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |              | 0      |        |              | 0      |        |              | 0      |        |              | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |              | 0      |        |              | 0      |        |              | 0      |        |              | 0      |        |
| Bicycle Volume [bicycles/h]                 |              | 0      |        |              | 0      |        |              | 0      |        |              | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 44      | 0       | 0       | 44      | 0       | 35       | 37      | 0       | 29       | 31      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 33      | 0       | 0       | 0       | 0       | 0        | 14      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L     | C    | C    | L     | C     | C     |
|---|-------|-------|-------|-------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110  | 110  | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 6     | 6     | 20    | 89   | 89   | 2     | 71    | 71    |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.06  | 0.19  | 0.81 | 0.81 | 0.02  | 0.65  | 0.65  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.04  | 0.03  | 0.16  | 0.43 | 0.45 | 0.01  | 0.37  | 0.37  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 3500  | 3800 | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 150   | 170   | 222   | 648   | 3078 | 1539 | 41    | 2460  | 1230  |
| d1, Uniform Delay [s]                   | 49.42 | 50.65 | 50.49 | 43.42 | 3.50 | 3.64 | 53.04 | 10.77 | 10.85 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.49  | 1.48  | 2.45  | 3.48  | 0.67 | 1.49 | 6.71  | 0.94  | 1.93  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |        |        |        |       |        |        |
|---------------------------------------|-------|-------|-------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.16  | 0.39  | 0.59  | 0.86   | 0.53   | 0.56   | 0.42  | 0.56   | 0.57   |
| d, Delay for Lane Group [s/veh]       | 49.91 | 52.12 | 52.94 | 46.90  | 4.17   | 5.13   | 59.75 | 11.71  | 12.78  |
| Lane Group LOS                        | D     | D     | D     | D      | A      | A      | E     | B      | B      |
| Critical Lane Group                   | No    | Yes   | No    | Yes    | No     | No     | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 0.65  | 1.87  | 1.82  | 7.60   | 4.51   | 5.25   | 0.54  | 8.94   | 9.45   |
| 50th-Percentile Queue Length [ft/ln]  | 16.26 | 46.79 | 45.45 | 190.09 | 112.68 | 131.17 | 13.47 | 223.43 | 236.33 |
| 95th-Percentile Queue Length [veh/ln] | 1.17  | 3.37  | 3.27  | 12.13  | 7.99   | 9.00   | 0.97  | 13.84  | 14.50  |
| 95th-Percentile Queue Length [ft/ln]  | 29.26 | 84.22 | 81.81 | 303.15 | 199.73 | 225.09 | 24.25 | 346.00 | 362.39 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 49.91 | 49.91 | 49.91 | 52.12 | 52.12 | 52.94 | 46.90 | 4.49 | 5.13 | 59.75 | 12.00 | 12.78 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | A    | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 49.91 |       |       | 52.66 |       |       | 12.20 |      |      | 12.46 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |      |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 13.95 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | B     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.636 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.55 | 44.55 | 0.00  | 44.55 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.764 | 2.494 | 0.000 | 3.345 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 727   | 727   | 600   | 491   |
| d_b, Bicycle Delay [s]                                   | 22.27 | 22.27 | 26.95 | 31.31 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.599 | 1.885 | 3.246 | 2.718 |
| Bicycle LOS  | A     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 32.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.865 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No          |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |             |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 161               | 307    | 11     | 119         | 208    | 386    | 476          | 1962   | 165    | 22           | 1483   | 174    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 161               | 307    | 11     | 119         | 208    | 386    | 476          | 1962   | 165    | 22           | 1483   | 174    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 40                | 77     | 3      | 30          | 52     | 97     | 119          | 491    | 41     | 6            | 371    | 44     |
| Total Analysis Volume [veh/h]               | 161               | 307    | 11     | 119         | 208    | 386    | 476          | 1962   | 165    | 22           | 1483   | 174    |
| Presence of On-Street Parking               | No                |        | No     | No          |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 14       | 27      | 0       | 18       | 31      | 0       | 19       | 36      | 0       | 14       | 31      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 16      | 0       | 0        | 19      | 0       | 0        | 20      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 10    | 24    | 24    | 8     | 22    | 22    | 15    | 45    | 45    | 3     | 33    | 33    |
| g / C, Green / Cycle                    | 0.11  | 0.25  | 0.25  | 0.08  | 0.23  | 0.23  | 0.16  | 0.47  | 0.47  | 0.03  | 0.34  | 0.34  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.08  | 0.08  | 0.07  | 0.11  | 0.20  | 0.14  | 0.34  | 0.09  | 0.01  | 0.29  | 0.29  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1900  | 1900  | 3500  | 5700  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 191   | 475   | 475   | 152   | 434   | 434   | 545   | 2670  | 890   | 52    | 1299  | 649   |
| d1, Uniform Delay [s]                   | 41.77 | 29.23 | 29.20 | 42.71 | 31.81 | 35.55 | 39.25 | 20.50 | 14.72 | 45.40 | 29.08 | 29.03 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.19  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.73  | 0.41  | 0.41  | 8.51  | 0.82  | 10.46 | 4.55  | 1.84  | 0.46  | 5.26  | 7.18  | 13.02 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |       |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.34   | 0.33   | 0.78   | 0.48   | 0.89   | 0.87   | 0.73   | 0.19  | 0.42  | 0.85   | 0.85   |
| d, Delay for Lane Group [s/veh]       | 51.50  | 29.64  | 29.61  | 51.22  | 32.63  | 46.01  | 43.81  | 22.34  | 15.18 | 50.66 | 36.26  | 42.05  |
| Lane Group LOS                        | D      | C      | C      | D      | C      | D      | D      | C      | B     | D     | D      | D      |
| Critical Lane Group                   | Yes    | No     | No     | No     | No     | Yes    | Yes    | No     | No    | No    | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.18   | 3.01   | 2.98   | 3.07   | 4.19   | 9.73   | 5.70   | 11.56  | 2.13  | 0.58  | 12.59  | 13.59  |
| 50th-Percentile Queue Length [ft/ln]  | 104.55 | 75.13  | 74.38  | 76.87  | 104.63 | 243.37 | 142.39 | 288.97 | 53.14 | 14.59 | 314.86 | 339.66 |
| 95th-Percentile Queue Length [veh/ln] | 7.53   | 5.41   | 5.36   | 5.53   | 7.53   | 14.85  | 9.61   | 17.13  | 3.83  | 1.05  | 18.41  | 19.63  |
| 95th-Percentile Queue Length [ft/ln]  | 188.20 | 135.23 | 133.89 | 138.36 | 188.33 | 371.30 | 240.24 | 428.37 | 95.65 | 26.27 | 460.36 | 490.78 |



**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 51.50 | 29.63 | 29.61 | 51.22 | 32.63 | 46.01 | 43.81 | 22.34 | 15.18 | 50.66 | 37.73 | 42.05 |
| Movement LOS                    | D     | C     | C     | D     | C     | D     | D     | C     | B     | D     | D     | D     |
| d_A, Approach Delay [s/veh]     | 36.98 |       |       | 42.97 |       |       | 25.81 |       |       | 38.34 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 32.87 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.865 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.18 | 37.18 | 37.18 | 37.18 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.473 | 2.628 | 3.353 | 3.121 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 484   | 568   | 673   | 568   |
| d_b, Bicycle Delay [s]                                   | 27.32 | 24.37 | 20.92 | 24.37 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.955 | 2.148 | 2.991 | 2.483 |
| Bicycle LOS  | A     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.732 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No            |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 316               | 124    | 42     | 21            | 236    | 355    | 109          | 765    | 1150   | 294          | 901    | 14     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 316               | 124    | 42     | 21            | 236    | 355    | 109          | 765    | 1150   | 294          | 901    | 14     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 79                | 31     | 11     | 5             | 59     | 89     | 27           | 191    | 288    | 74           | 225    | 4      |
| Total Analysis Volume [veh/h]               | 316               | 124    | 42     | 21            | 236    | 355    | 109          | 765    | 1150   | 294          | 901    | 14     |
| Presence of On-Street Parking               | No                |        | No     | No            |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 6        | 6       | 0       | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 30       | 30      | 0       | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 16       | 48      | 48      | 10       | 42      | 0       | 20       | 37      | 37      | 15       | 32      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0        | 7       | 0       | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 30      | 30      | 0        | 31      | 0       | 0        | 26      | 26      | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Maximum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 12    | 33    | 48    | 3     | 23    | 23    | 8     | 48    | 64    | 11    | 50    | 50    |
| g / C, Green / Cycle                    | 0.11  | 0.30  | 0.43  | 0.03  | 0.21  | 0.21  | 0.08  | 0.43  | 0.58  | 0.10  | 0.46  | 0.46  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.07  | 0.02  | 0.01  | 0.12  | 0.19  | 0.06  | 0.20  | 0.30  | 0.08  | 0.16  | 0.17  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 3800  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 384   | 562   | 822   | 48    | 404   | 404   | 138   | 1640  | 2195  | 352   | 1731  | 866   |
| d1, Uniform Delay [s]                   | 47.97 | 29.23 | 18.13 | 52.75 | 38.95 | 41.95 | 49.96 | 22.26 | 14.08 | 48.62 | 19.39 | 19.54 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.12  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.48  | 0.20  | 0.03  | 6.02  | 1.34  | 6.87  | 9.60  | 0.96  | 0.90  | 5.23  | 0.55  | 1.18  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |       |       |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.82   | 0.22   | 0.05  | 0.43  | 0.58   | 0.88   | 0.79   | 0.47   | 0.52   | 0.84   | 0.35   | 0.36   |
| d, Delay for Lane Group [s/veh]       | 52.45  | 29.42  | 18.16 | 58.76 | 40.29  | 48.83  | 59.55  | 23.22  | 14.98  | 53.85  | 19.94  | 20.72  |
| Lane Group LOS                        | D      | C      | B     | E     | D      | D      | E      | C      | B      | D      | B      | C      |
| Critical Lane Group                   | Yes    | No     | No    | No    | No     | Yes    | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.47   | 2.50   | 0.63  | 0.65  | 5.86   | 10.02  | 3.31   | 7.15   | 8.53   | 4.21   | 5.04   | 5.44   |
| 50th-Percentile Queue Length [ft/ln]  | 111.66 | 62.62  | 15.69 | 16.30 | 146.50 | 250.55 | 82.74  | 178.65 | 213.24 | 105.16 | 126.00 | 135.98 |
| 95th-Percentile Queue Length [veh/ln] | 7.93   | 4.51   | 1.13  | 1.17  | 9.83   | 15.21  | 5.96   | 11.53  | 13.32  | 7.57   | 8.72   | 9.26   |
| 95th-Percentile Queue Length [ft/ln]  | 198.31 | 112.72 | 28.24 | 29.34 | 245.75 | 380.34 | 148.93 | 288.25 | 332.98 | 189.26 | 218.04 | 231.60 |

**Movement, Approach, & Intersection Results**

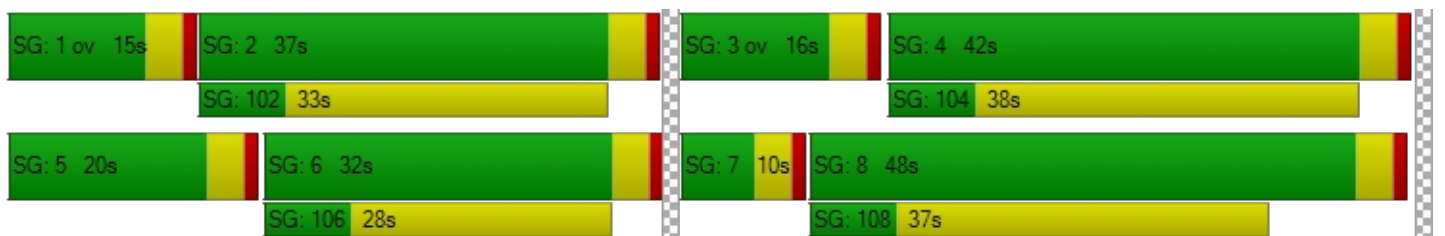
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.45 | 29.42 | 18.16 | 58.76 | 40.29 | 48.83 | 59.55 | 23.22 | 14.98 | 53.85 | 20.20 | 20.72 |
| Movement LOS                    | D     | C     | B     | E     | D     | D     | E     | C     | B     | D     | C     | C     |
| d_A, Approach Delay [s/veh]     | 43.54 |       |       | 45.88 |       |       | 20.49 |       |       | 28.39 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 28.86 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.732 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 44.58 |  |  | 44.58 |  |  | 44.58 |  |  | 44.58 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.814 |  |  | 2.350 |  |  | 3.173 |  |  | 2.887 |  |  |
| Crosswalk LOS  | C     |  |  | B     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 800   |  |  | 691   |  |  | 600   |  |  | 509   |  |  |
| d_b, Bicycle Delay [s]                                   | 19.82 |  |  | 23.59 |  |  | 26.97 |  |  | 30.59 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.355 |  |  | 2.569 |  |  | 3.229 |  |  | 2.225 |  |  |
| Bicycle LOS  | B     |  |  | B     |  |  | C     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 6.9   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.304 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No               |        |        | No               |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 46               | 6      | 18     | 5                | 0      | 6      | 7            | 819    | 49     | 25           | 1181   | 2      |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 46               | 6      | 18     | 5                | 0      | 6      | 7            | 819    | 49     | 25           | 1181   | 2      |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 12               | 2      | 5      | 1                | 0      | 2      | 2            | 205    | 12     | 6            | 295    | 1      |
| Total Analysis Volume [veh/h]               | 46               | 6      | 18     | 5                | 0      | 6      | 7            | 819    | 49     | 25           | 1181   | 2      |
| Presence of On-Street Parking               | No               |        | No     | No               |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 6       | 0       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 30      | 0       | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 40      | 0       | 40      | 0       | 0       | 12       | 30      | 0       | 10       | 28      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 7       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 29      | 0       | 29      | 0       | 0       | 0        | 18      | 0       | 0        | 16      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         | No      |         |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 2     | 2     | 1     | 93   | 93   | 3     | 95   | 95   |
| g / C, Green / Cycle                    | 0.05  | 0.05  | 0.02  | 0.02  | 0.01  | 0.78 | 0.78 | 0.03  | 0.80 | 0.80 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03  | 0.01  | 0.00  | 0.00  | 0.00  | 0.23 | 0.23 | 0.01  | 0.20 | 0.21 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 82    | 87    | 28    | 30    | 20    | 1475 | 1475 | 52    | 3019 | 1509 |
| d1, Uniform Delay [s]                   | 56.11 | 55.37 | 58.29 | 58.31 | 58.94 | 3.89 | 3.87 | 57.41 | 3.19 | 3.23 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.88  | 1.71  | 2.88  | 3.19  | 10.63 | 0.51 | 0.50 | 6.83  | 0.21 | 0.44 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |       |       |        |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|--------|
| X, volume / capacity                  | 0.56  | 0.28  | 0.18  | 0.20  | 0.36  | 0.30   | 0.29   | 0.48  | 0.26  | 0.27   |
| d, Delay for Lane Group [s/veh]       | 61.99 | 57.08 | 61.18 | 61.51 | 69.58 | 4.41   | 4.37   | 64.25 | 3.39  | 3.67   |
| Lane Group LOS                        | E     | E     | E     | E     | E     | A      | A      | E     | A     | A      |
| Critical Lane Group                   | Yes   | No    | No    | Yes   | No    | Yes    | No     | Yes   | No    | No     |
| 50th-Percentile Queue Length [veh/ln] | 1.50  | 0.74  | 0.17  | 0.21  | 0.27  | 2.80   | 2.73   | 0.85  | 2.01  | 2.23   |
| 50th-Percentile Queue Length [ft/ln]  | 37.51 | 18.62 | 4.32  | 5.17  | 6.73  | 69.97  | 68.19  | 21.15 | 50.26 | 55.74  |
| 95th-Percentile Queue Length [veh/ln] | 2.70  | 1.34  | 0.31  | 0.37  | 0.48  | 5.04   | 4.91   | 1.52  | 3.62  | 4.01   |
| 95th-Percentile Queue Length [ft/ln]  | 67.51 | 33.51 | 7.78  | 9.31  | 12.12 | 125.94 | 122.74 | 38.08 | 90.47 | 100.34 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 61.99 | 57.08 | 57.08 | 61.18 | 0.00 | 61.51 | 69.58 | 4.39 | 4.37 | 64.25 | 3.49 | 3.67 |
| Movement LOS                    | E     | E     | E     | E     |      | E     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 60.31 |       |       | 61.36 |      |       | 4.91  |      |      | 4.75  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 6.90  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.304 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.51 |  |  | 49.51 |  |  | 49.51 |  |  | 49.51 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.001 |  |  | 1.962 |  |  | 2.809 |  |  | 2.800 |  |  |
| Crosswalk LOS  | B     |  |  | A     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 600   |  |  | 600   |  |  | 433   |  |  | 400   |  |  |
| d_b, Bicycle Delay [s]                                   | 29.41 |  |  | 29.41 |  |  | 36.82 |  |  | 38.41 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.675 |  |  | 1.560 |  |  | 2.281 |  |  | 2.224 |  |  |
| Bicycle LOS  | A     |  |  | A     |  |  | B     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 144.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.003 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound          |        |        |
| Lane Configuration           |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 0      | 1            | 0      | 0      | 1                  | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00               |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No                 |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes                |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 301             | 198    | 166    | 8               | 402    | 46     | 53           | 240    | 556    | 1016               | 867    | 2      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 301             | 198    | 166    | 8               | 402    | 46     | 53           | 240    | 556    | 1016               | 867    | 2      |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 75              | 50     | 42     | 2               | 101    | 12     | 13           | 60     | 139    | 254                | 217    | 1      |
| Total Analysis Volume [veh/h]               | 301             | 198    | 166    | 8               | 402    | 46     | 53           | 240    | 556    | 1016               | 867    | 2      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Unsigna | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 16       | 49      | 0       | 10       | 43      | 0       | 13       | 36      | 0       | 25       | 48      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 31      | 0       | 0        | 32      | 0       | 0        | 25      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L      | C     | L     | C     | C     | L     | C     | C     | L      | C     | C     |
|---|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| C, Cycle Length [s]                     | 120    | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120    | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00   | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 12     | 28    | 1     | 17    | 17    | 5     | 54    | 54    | 21     | 70    | 70    |
| g / C, Green / Cycle                    | 0.10   | 0.23  | 0.01  | 0.14  | 0.14  | 0.04  | 0.45  | 0.45  | 0.18   | 0.58  | 0.58  |
| (v / s)_i Volume / Saturation Flow Rate | 0.17   | 0.05  | 0.00  | 0.12  | 0.12  | 0.03  | 0.06  | 0.29  | 0.29   | 0.15  | 0.16  |
| s, saturation flow rate [veh/h]         | 1800   | 3800  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500   | 3800  | 1900  |
| c, Capacity [veh/h]                     | 181    | 872   | 23    | 269   | 269   | 76    | 1707  | 854   | 613    | 2212  | 1106  |
| d1, Uniform Delay [s]                   | 54.00  | 37.59 | 58.78 | 50.22 | 50.05 | 56.73 | 19.43 | 25.74 | 49.51  | 12.33 | 12.44 |
| k, delay calibration                    | 0.21   | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.14   | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 308.54 | 0.13  | 8.95  | 7.04  | 6.16  | 10.84 | 0.17  | 3.84  | 297.69 | 0.28  | 0.60  |
| d3, Initial Queue Delay [s]             | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| PF, progression factor                  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |       |        |        |       |       |        |         |        |        |
|---------------------------------------|--------|--------|-------|--------|--------|-------|-------|--------|---------|--------|--------|
| X, volume / capacity                  | 1.66   | 0.23   | 0.35  | 0.84   | 0.82   | 0.70  | 0.14  | 0.65   | 1.66    | 0.26   | 0.27   |
| d, Delay for Lane Group [s/veh]       | 362.54 | 37.72  | 67.73 | 57.26  | 56.21  | 67.57 | 19.61 | 29.58  | 347.21  | 12.61  | 13.04  |
| Lane Group LOS                        | F      | D      | E     | E      | E      | E     | B     | C      | F       | B      | B      |
| Critical Lane Group                   | Yes    | No     | No    | Yes    | No     | No    | No    | Yes    | Yes     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 20.96  | 2.40   | 0.30  | 7.16   | 6.90   | 1.82  | 2.02  | 13.06  | 34.51   | 3.78   | 4.10   |
| 50th-Percentile Queue Length [ft/ln]  | 524.11 | 59.93  | 7.45  | 178.98 | 172.52 | 45.41 | 50.53 | 326.59 | 862.64  | 94.52  | 102.38 |
| 95th-Percentile Queue Length [veh/ln] | 33.34  | 4.32   | 0.54  | 11.55  | 11.21  | 3.27  | 3.64  | 18.99  | 53.73   | 6.81   | 7.37   |
| 95th-Percentile Queue Length [ft/ln]  | 833.62 | 107.88 | 13.42 | 288.69 | 280.22 | 81.73 | 90.95 | 474.78 | 1343.28 | 170.14 | 184.29 |

**Movement, Approach, & Intersection Results**

|                                 |        |       |      |       |       |       |       |       |       |        |       |       |
|---------------------------------|--------|-------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| d_M, Delay for Movement [s/veh] | 362.54 | 37.72 | 0.00 | 67.73 | 56.80 | 56.21 | 67.57 | 19.61 | 29.58 | 347.21 | 12.76 | 13.04 |
| Movement LOS                    | F      | D     |      | E     | E     | E     | E     | B     | C     | F      | B     | B     |
| d_A, Approach Delay [s/veh]     | 233.65 |       |      | 56.94 |       |       | 29.13 |       |       | 193.02 |       |       |
| Approach LOS                    | F      |       |      | E     |       |       | C     |       |       | F      |       |       |
| d_I, Intersection Delay [s/veh] | 143.98 |       |      |       |       |       |       |       |       |        |       |       |
| Intersection LOS                | F      |       |      |       |       |       |       |       |       |        |       |       |
| Intersection V/C                | 1.003  |       |      |       |       |       |       |       |       |        |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.869 |  |  | 2.452 |  |  | 2.895 |  |  | 2.999 |  |  |
| Crosswalk LOS  | C     |  |  | B     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 750   |  |  | 650   |  |  | 533   |  |  | 733   |  |  |
| d_b, Bicycle Delay [s]                                   | 23.45 |  |  | 27.35 |  |  | 32.28 |  |  | 24.08 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.971 |  |  | 1.936 |  |  | 2.027 |  |  | 2.596 |  |  |
| Bicycle LOS  | A     |  |  | A     |  |  | B     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.5   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.579 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ⤵             |        |        | ↵↵                 |        |        | ↵↵                 |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Curb Present                 | No            |        |        | No            |        |        | No                 |        |        | No                 |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name  | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
|   |               |        |        |               |        |        |                    |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 5             | 1      | 1      | 0             | 0      | 25     | 15                 | 412    | 8      | 7                  | 1899   | 5      |
| Base Volume Adjustment Factor               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 5             | 1      | 1      | 0             | 0      | 25     | 15                 | 412    | 8      | 7                  | 1899   | 5      |
| Peak Hour Factor                            | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 1             | 0      | 0      | 0             | 0      | 6      | 4                  | 103    | 2      | 2                  | 475    | 1      |
| Total Analysis Volume [veh/h]               | 5             | 1      | 1      | 0             | 0      | 25     | 15                 | 412    | 8      | 7                  | 1899   | 5      |
| Presence of On-Street Parking               | No            |        | No     | No            |        | No     | No                 |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 0       | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 0       | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 0.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 35      | 0       | 0       | 0       | 35      | 10       | 75      | 0       | 10       | 75      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 24      | 0       | 0       | 0       | 0       | 0        | 17      | 0       | 0        | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         |         | No      |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 3     | 3     | 2     | 103  | 103  | 1     | 102  | 102  |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.02  | 0.86 | 0.86 | 0.01  | 0.85 | 0.85 |
| (v / s)_i Volume / Saturation Flow Rate | 0.00  | 0.01  | 0.01  | 0.11 | 0.11 | 0.00  | 0.50 | 0.00 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900 | 1900 | 1900  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 103   | 54    | 36    | 1635 | 1635 | 21    | 3235 | 1617 |
| d1, Uniform Delay [s]                   | 56.81 | 57.35 | 58.08 | 1.31 | 1.31 | 58.90 | 2.65 | 1.33 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.27  | 5.91  | 7.41  | 0.16 | 0.16 | 9.39  | 0.79 | 0.00 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |       |        |      |
|---------------------------------------|-------|-------|-------|-------|-------|-------|--------|------|
| X, volume / capacity                  | 0.07  | 0.46  | 0.41  | 0.13  | 0.13  | 0.34  | 0.59   | 0.00 |
| d, Delay for Lane Group [s/veh]       | 57.09 | 63.26 | 65.49 | 1.48  | 1.47  | 68.30 | 3.44   | 1.33 |
| Lane Group LOS                        | E     | E     | E     | A     | A     | E     | A      | A    |
| Critical Lane Group                   | No    | Yes   | Yes   | No    | No    | No    | Yes    | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.22  | 0.84  | 0.52  | 0.49  | 0.49  | 0.27  | 4.26   | 0.01 |
| 50th-Percentile Queue Length [ft/ln]  | 5.38  | 20.92 | 13.12 | 12.22 | 12.15 | 6.63  | 106.62 | 0.30 |
| 95th-Percentile Queue Length [veh/ln] | 0.39  | 1.51  | 0.94  | 0.88  | 0.87  | 0.48  | 7.65   | 0.02 |
| 95th-Percentile Queue Length [ft/ln]  | 9.68  | 37.65 | 23.62 | 21.99 | 21.87 | 11.93 | 191.29 | 0.53 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.09 | 57.09 | 57.09 | 0.00  | 0.00 | 63.26 | 65.49 | 1.48 | 1.47 | 68.30 | 3.44 | 1.33 |
| Movement LOS                    | E     | E     | E     |       |      | E     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 57.09 |       |       | 63.26 |      |       | 3.68  |      |      | 3.67  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 4.46  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.579 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.50 | 49.50 | 0.00  | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.739 | 1.751 | 0.000 | 2.844 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 517   | 517   | 1184  | 1184  |
| d_b, Bicycle Delay [s]                                   | 33.00 | 33.00 | 10.00 | 10.00 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.571 | 1.560 | 1.918 | 3.136 |
| Bicycle LOS  | A     | A     | A     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 43.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.827 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | [Diagram]               |        |        | [Diagram]               |        |        | [Diagram]    |        |        | [Diagram]    |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 84                      | 169    | 110    | 739                     | 930    | 242    | 119          | 574    | 53     | 88           | 630    | 322    |
| Base Volume Input [veh/h]                   | 84                      | 169    | 110    | 739                     | 930    | 242    | 119          | 574    | 53     | 88           | 630    | 322    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 84                      | 169    | 110    | 739                     | 930    | 242    | 119          | 574    | 53     | 88           | 630    | 322    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 21                      | 42     | 28     | 185                     | 233    | 61     | 30           | 144    | 13     | 22           | 158    | 81     |
| Total Analysis Volume [veh/h]               | 84                      | 169    | 110    | 739                     | 930    | 242    | 119          | 574    | 53     | 88           | 630    | 322    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 32       | 61      | 0       | 10       | 39      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 30      | 0       | 0        | 28      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 36    | 36    | 27    | 57    | 57    | 6     | 35    | 35    | 6     | 35    | 35    |
| g / C, Green / Cycle                    | 0.05  | 0.30  | 0.30  | 0.23  | 0.48  | 0.48  | 0.05  | 0.29  | 0.29  | 0.05  | 0.29  | 0.29  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02  | 0.04  | 0.06  | 0.21  | 0.49  | 0.13  | 0.03  | 0.15  | 0.03  | 0.03  | 0.17  | 0.17  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 164   | 1130  | 565   | 793   | 907   | 907   | 172   | 1122  | 561   | 166   | 1115  | 557   |
| d1, Uniform Delay [s]                   | 55.84 | 31.00 | 31.44 | 45.48 | 31.37 | 18.80 | 56.15 | 35.11 | 30.66 | 55.86 | 35.91 | 36.07 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 2.45  | 0.06  | 0.17  | 5.62  | 21.04 | 0.16  | 4.89  | 1.67  | 0.33  | 2.63  | 2.08  | 4.32  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |        |        |        |        |       |        |       |       |        |        |
|---------------------------------------|-------|-------|--------|--------|--------|--------|-------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.51  | 0.15  | 0.19   | 0.93   | 1.03   | 0.27   | 0.69  | 0.51   | 0.09  | 0.53  | 0.57   | 0.58   |
| d, Delay for Lane Group [s/veh]       | 58.28 | 31.06 | 31.61  | 51.11  | 52.41  | 18.95  | 61.04 | 36.77  | 30.99 | 58.48 | 37.99  | 40.39  |
| Lane Group LOS                        | E     | C     | C      | D      | F      | B      | E     | D      | C     | E     | D      | D      |
| Critical Lane Group                   | Yes   | No    | No     | No     | Yes    | No     | Yes   | No     | No    | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 1.30  | 1.82  | 2.42   | 11.34  | 15.25  | 4.07   | 1.89  | 7.23   | 1.18  | 1.36  | 8.13   | 8.69   |
| 50th-Percentile Queue Length [ft/ln]  | 32.47 | 45.61 | 60.55  | 283.56 | 381.13 | 101.72 | 47.28 | 180.80 | 29.41 | 34.09 | 203.30 | 217.21 |
| 95th-Percentile Queue Length [veh/ln] | 2.34  | 3.28  | 4.36   | 16.87  | 22.06  | 7.32   | 3.40  | 11.64  | 2.12  | 2.45  | 12.81  | 13.52  |
| 95th-Percentile Queue Length [ft/ln]  | 58.45 | 82.09 | 109.00 | 421.65 | 551.38 | 183.09 | 85.11 | 291.06 | 52.94 | 61.36 | 320.22 | 338.06 |

**Movement, Approach, & Intersection Results**

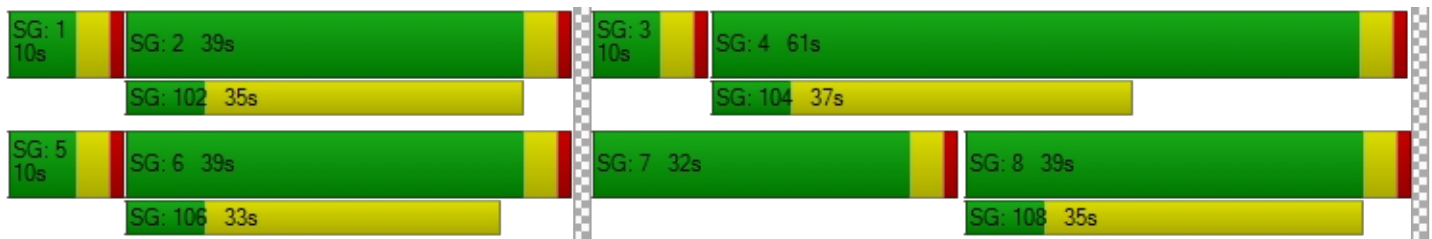
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 58.28 | 31.06 | 31.61 | 51.11 | 52.41 | 18.95 | 61.04 | 36.77 | 30.99 | 58.48 | 37.99 | 40.39 |
| Movement LOS                    | E     | C     | C     | D     | F     | B     | E     | D     | C     | E     | D     | D     |
| d_A, Approach Delay [s/veh]     | 37.52 |       |       | 47.67 |       |       | 40.23 |       |       | 40.47 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | D     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 43.55 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.827 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.50 | 49.50 | 49.50 | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.807 | 2.959 | 2.845 | 2.951 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 583   | 950   | 583   | 583   |
| d_b, Bicycle Delay [s]                                   | 30.10 | 16.54 | 30.10 | 30.10 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.859 | 3.136 | 2.175 | 2.418 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.743 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐           |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 272               | 7      | 344    | 60                | 32     | 10     | 5            | 1049   | 356    | 380          | 850    | 11     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 272               | 7      | 344    | 60                | 32     | 10     | 5            | 1049   | 356    | 380          | 850    | 11     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 68                | 2      | 86     | 15                | 8      | 3      | 1            | 262    | 89     | 95           | 213    | 3      |
| Total Analysis Volume [veh/h]               | 272               | 7      | 344    | 60                | 32     | 10     | 5            | 1049   | 356    | 380          | 850    | 11     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 24       | 61      | 61      | 0       | 37      | 0       | 10       | 38      | 0       | 21       | 49      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 26      | 0       | 26      | 0       | 0        | 27      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | C     | L     | C    | C    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 12    | 22    | 43    | 6     | 6     | 1     | 69    | 69    | 17    | 85   | 85   |
| g / C, Green / Cycle                    | 0.10  | 0.18  | 0.35  | 0.05  | 0.05  | 0.01  | 0.58  | 0.58  | 0.14  | 0.71 | 0.71 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.00  | 0.18  | 0.03  | 0.02  | 0.00  | 0.38  | 0.36  | 0.11  | 0.23 | 0.23 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1800  | 1900  | 1900  | 3500  | 1900 | 1900 |
| c, Capacity [veh/h]                     | 340   | 342   | 675   | 116   | 94    | 15    | 1099  | 1099  | 496   | 1352 | 1352 |
| d1, Uniform Delay [s]                   | 53.03 | 40.50 | 30.48 | 56.09 | 55.45 | 59.20 | 17.30 | 16.59 | 49.59 | 6.45 | 6.44 |
| k, delay calibration                    | 0.11  | 0.11  | 0.25  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.34  | 0.02  | 1.37  | 3.51  | 3.30  | 13.08 | 3.15  | 2.60  | 2.50  | 0.62 | 0.62 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |       |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.80   | 0.02  | 0.51   | 0.52  | 0.45  | 0.34  | 0.66   | 0.62   | 0.77   | 0.32   | 0.32   |
| d, Delay for Lane Group [s/veh]       | 57.37  | 40.52 | 31.85  | 59.61 | 58.75 | 72.29 | 20.45  | 19.19  | 52.09  | 7.07   | 7.06   |
| Lane Group LOS                        | E      | D     | C      | E     | E     | E     | C      | B      | D      | A      | A      |
| Critical Lane Group                   | No     | No    | Yes    | No    | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.22   | 0.17  | 8.08   | 1.90  | 1.32  | 0.20  | 14.13  | 12.55  | 5.66   | 3.98   | 3.95   |
| 50th-Percentile Queue Length [ft/ln]  | 105.46 | 4.35  | 202.02 | 47.54 | 33.09 | 5.12  | 353.15 | 313.68 | 141.41 | 99.40  | 98.86  |
| 95th-Percentile Queue Length [veh/ln] | 7.59   | 0.31  | 12.74  | 3.42  | 2.38  | 0.37  | 20.29  | 18.36  | 9.56   | 7.16   | 7.12   |
| 95th-Percentile Queue Length [ft/ln]  | 189.67 | 7.84  | 318.56 | 85.58 | 59.56 | 9.21  | 507.24 | 458.91 | 238.92 | 178.92 | 177.95 |

**Movement, Approach, & Intersection Results**

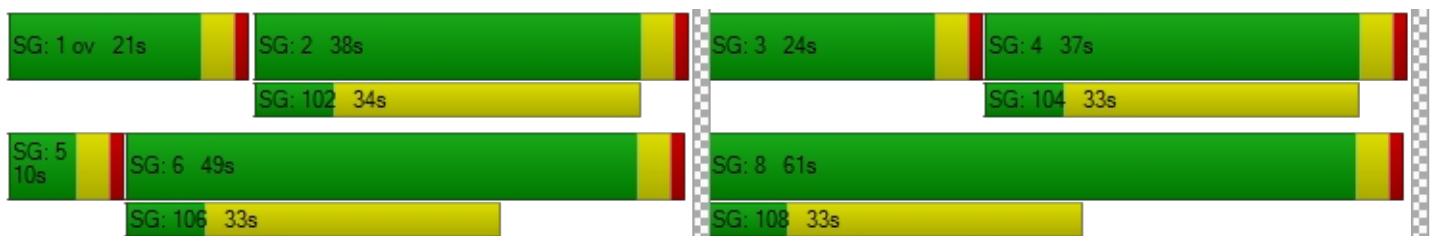
|                                 |       |       |       |       |       |       |       |       |       |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.37 | 40.52 | 31.85 | 59.61 | 58.75 | 58.75 | 72.29 | 20.06 | 19.19 | 52.09 | 7.06 | 7.06 |
| Movement LOS                    | E     | D     | C     | E     | E     | E     | E     | C     | B     | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 43.09 |       |       | 59.25 |       |       | 20.03 |       |       | 20.85 |      |      |
| Approach LOS                    | D     |       |       | E     |       |       | C     |       |       | C     |      |      |
| d_I, Intersection Delay [s/veh] | 25.77 |       |       |       |       |       |       |       |       |       |      |      |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |      |      |
| Intersection V/C                | 0.743 |       |       |       |       |       |       |       |       |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.693 | 1.995 | 2.809 | 2.990 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 950   | 550   | 567   | 750   |
| d_b, Bicycle Delay [s]                                   | 16.54 | 31.54 | 30.82 | 23.44 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.588 | 1.728 | 2.723 | 2.583 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**





|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 24.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.709 |

**Intersection Setup**

| Name                         | N Associated Road   |        |        | N Associated Road   |        |        | Birch Street  |        |        | Birch Street  |        |        |
|------------------------------|---|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |  |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1      | 1   | 0      | 1      | 1   | 0      | 0      | 1   | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 | No  |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes   |        |        | Yes   |        |        | Yes   |        |        | No  |        |        |



**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 3                 | 3      | 6      | 178               | 2      | 499    | 353          | 969    | 18     | 9            | 820    | 94     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 3                 | 3      | 6      | 178               | 2      | 499    | 353          | 969    | 18     | 9            | 820    | 94     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 1                 | 1      | 2      | 45                | 1      | 125    | 88           | 242    | 5      | 2            | 205    | 24     |
| Total Analysis Volume [veh/h]               | 3                 | 3      | 6      | 178               | 2      | 499    | 353          | 969    | 18     | 9            | 820    | 94     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 44       | 38      | 0       | 38       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 2     | 2     | 2     | 24    | 24    | 61    | 27    | 76    | 76    | 2     | 51    | 51    |
| g / C, Green / Cycle                    | 0.02  | 0.02  | 0.02  | 0.20  | 0.20  | 0.51  | 0.22  | 0.63  | 0.63  | 0.01  | 0.42  | 0.42  |
| (v / s)_i Volume / Saturation Flow Rate | 0.00  | 0.00  | 0.00  | 0.05  | 0.05  | 0.26  | 0.20  | 0.26  | 0.26  | 0.01  | 0.22  | 0.05  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 67    | 33    | 33    | 362   | 362   | 969   | 405   | 1205  | 1205  | 25    | 1608  | 804   |
| d1, Uniform Delay [s]                   | 58.05 | 58.05 | 58.14 | 40.32 | 40.32 | 19.53 | 44.86 | 10.86 | 10.84 | 58.67 | 25.47 | 21.02 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.49  | 0.16  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.28  | 1.17  | 2.58  | 0.35  | 0.35  | 1.91  | 8.24  | 1.04  | 1.03  | 8.46  | 1.16  | 0.30  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |        |        |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.05  | 0.09  | 0.18  | 0.25   | 0.25   | 0.51   | 0.87   | 0.41   | 0.41   | 0.36  | 0.51   | 0.12  |
| d, Delay for Lane Group [s/veh]       | 58.33 | 59.21 | 60.72 | 40.67  | 40.67  | 21.44  | 53.10  | 11.90  | 11.87  | 67.12 | 26.63  | 21.31 |
| Lane Group LOS                        | E     | E     | E     | D      | D      | C      | D      | B      | B      | E     | C      | C     |
| Critical Lane Group                   | No    | No    | Yes   | No     | No     | Yes    | Yes    | No     | No     | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.09  | 0.10  | 0.20  | 2.28   | 2.29   | 9.62   | 11.01  | 6.57   | 6.52   | 0.33  | 8.80   | 1.68  |
| 50th-Percentile Queue Length [ft/ln]  | 2.37  | 2.51  | 5.09  | 57.08  | 57.13  | 240.46 | 275.26 | 164.19 | 162.96 | 8.26  | 220.07 | 42.06 |
| 95th-Percentile Queue Length [veh/ln] | 0.17  | 0.18  | 0.37  | 4.11   | 4.11   | 14.70  | 16.45  | 10.77  | 10.71  | 0.59  | 13.67  | 3.03  |
| 95th-Percentile Queue Length [ft/ln]  | 4.27  | 4.52  | 9.16  | 102.75 | 102.84 | 367.61 | 411.30 | 269.26 | 267.63 | 14.86 | 341.71 | 75.70 |

**Movement, Approach, & Intersection Results**

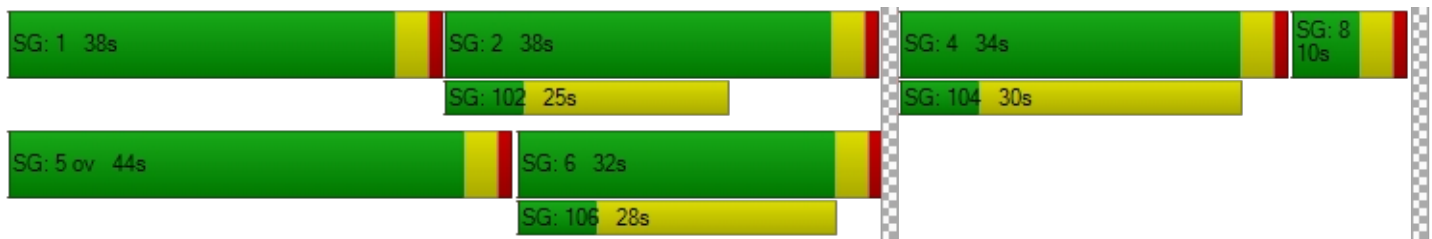
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 58.33 | 59.21 | 60.72 | 40.67 | 40.67 | 21.44 | 53.10 | 11.89 | 11.87 | 67.12 | 26.63 | 21.31 |
| Movement LOS                    | E     | E     | E     | D     | D     | C     | D     | B     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 59.74 |       |       | 26.54 |       |       | 22.74 |       |       | 26.48 |       |       |
| Approach LOS                    | E     |       |       | C     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 24.93 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.709 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.155 | 2.420 | 2.837 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 100   | 500   | 567   | 467   |
| d_b, Bicycle Delay [s]                                   | 54.17 | 33.76 | 30.83 | 35.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.579 | 2.680 | 2.665 | 2.321 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 35.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.590 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 148               | 239    | 101    | 487               | 1095   | 202    | 50           | 649    | 382    | 69           | 493    | 238    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 148               | 239    | 101    | 487               | 1095   | 202    | 50           | 649    | 382    | 69           | 493    | 238    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 37                | 60     | 25     | 122               | 274    | 51     | 13           | 162    | 96     | 17           | 123    | 60     |
| Total Analysis Volume [veh/h]               | 148               | 239    | 101    | 487               | 1095   | 202    | 50           | 649    | 382    | 69           | 493    | 238    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 11       | 37      | 0       | 34       | 60      | 0       | 10       | 39      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 0       | 0        | 26      | 0       | 0        | 28      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 7     | 20    | 20    | 19    | 32    | 32    | 5     | 59    | 59    | 6     | 60    | 60    |
| g / C, Green / Cycle                    | 0.06  | 0.16  | 0.16  | 0.16  | 0.27  | 0.27  | 0.04  | 0.49  | 0.49  | 0.05  | 0.50  | 0.50  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.06  | 0.06  | 0.14  | 0.23  | 0.22  | 0.03  | 0.17  | 0.20  | 0.04  | 0.13  | 0.13  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 1800  | 3800  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 205   | 621   | 311   | 568   | 1016  | 508   | 75    | 1866  | 933   | 90    | 1898  | 949   |
| d1, Uniform Delay [s]                   | 55.56 | 44.71 | 44.61 | 48.92 | 41.83 | 41.49 | 56.74 | 18.75 | 19.46 | 56.36 | 17.28 | 17.19 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.77  | 0.37  | 0.69  | 3.86  | 2.25  | 3.71  | 9.96  | 0.51  | 1.33  | 12.85 | 0.33  | 0.63  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.72   | 0.37   | 0.36   | 0.86   | 0.86   | 0.84   | 0.67  | 0.35   | 0.41   | 0.77   | 0.26   | 0.25   |
| d, Delay for Lane Group [s/veh]       | 60.33  | 45.08  | 45.30  | 52.78  | 44.08  | 45.20  | 66.70 | 19.27  | 20.79  | 69.21  | 17.61  | 17.83  |
| Lane Group LOS                        | E      | D      | D      | D      | D      | D      | E     | B      | C      | E      | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No    | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.34   | 3.09   | 3.00   | 7.39   | 12.52  | 12.30  | 1.70  | 5.63   | 7.07   | 2.39   | 3.99   | 3.92   |
| 50th-Percentile Queue Length [ft/ln]  | 58.48  | 77.15  | 74.92  | 184.75 | 313.04 | 307.46 | 42.56 | 140.87 | 176.67 | 59.68  | 99.74  | 97.88  |
| 95th-Percentile Queue Length [veh/ln] | 4.21   | 5.55   | 5.39   | 11.85  | 18.32  | 18.05  | 3.06  | 9.53   | 11.43  | 4.30   | 7.18   | 7.05   |
| 95th-Percentile Queue Length [ft/ln]  | 105.26 | 138.87 | 134.86 | 296.21 | 458.12 | 451.25 | 76.61 | 238.19 | 285.66 | 107.43 | 179.53 | 176.19 |



**Movement, Approach, & Intersection Results**

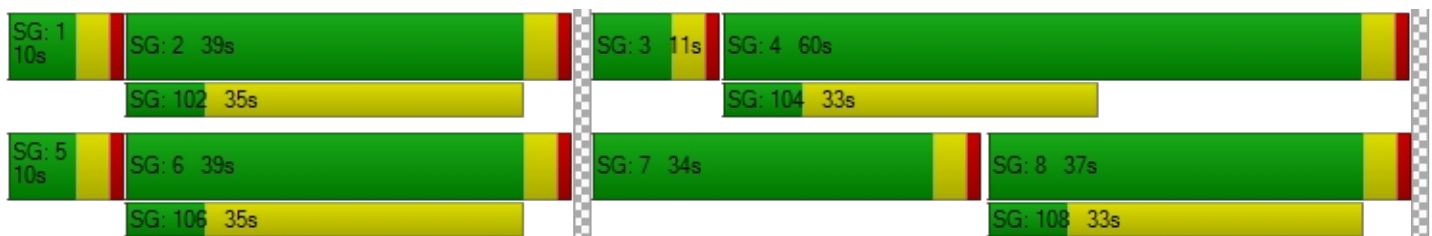
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 60.33 | 45.09 | 45.30 | 52.78 | 44.31 | 45.20 | 66.70 | 19.27 | 20.79 | 69.21 | 17.61 | 17.83 |
| Movement LOS                    | E     | D     | D     | D     | D     | D     | E     | B     | C     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 49.75 |       |       | 46.72 |       |       | 22.00 |       |       | 22.13 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 35.91 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.590 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.987 | 3.021 | 2.779 | 2.798 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 550   | 933   | 583   | 583   |
| d_b, Bicycle Delay [s]                                   | 31.55 | 17.08 | 30.12 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.828 | 2.541 | 2.451 | 2.220 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 109.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.837 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 148             | 239    | 15     | 819             | 894    | 278    | 69           | 509    | 148    | 14         | 403    | 348    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 148             | 239    | 15     | 819             | 894    | 278    | 69           | 509    | 148    | 14         | 403    | 348    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 37              | 60     | 4      | 205             | 224    | 70     | 17           | 127    | 37     | 4          | 101    | 87     |
| Total Analysis Volume [veh/h]               | 148             | 239    | 15     | 819             | 894    | 278    | 69           | 509    | 148    | 14         | 403    | 348    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 15       | 38      | 0       | 36       | 59      | 0       | 10       | 36      | 0       | 10       | 36      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L      | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120    | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 11    | 20    | 20    | 32     | 41    | 41    | 5     | 50    | 50    | 2     | 47    | 47    |
| g / C, Green / Cycle                    | 0.09  | 0.16  | 0.16  | 0.27   | 0.34  | 0.34  | 0.05  | 0.42  | 0.42  | 0.02  | 0.39  | 0.39  |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.07  | 0.07  | 0.46   | 0.31  | 0.31  | 0.02  | 0.18  | 0.17  | 0.01  | 0.11  | 0.18  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800   | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 166   | 311   | 311   | 480    | 642   | 642   | 160   | 792   | 792   | 35    | 1484  | 742   |
| d1, Uniform Delay [s]                   | 53.90 | 45.00 | 44.96 | 44.04  | 38.03 | 38.03 | 55.76 | 24.88 | 24.49 | 58.15 | 24.94 | 27.29 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50   | 0.23  | 0.23  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 14.77 | 0.87  | 0.85  | 327.21 | 10.45 | 10.45 | 1.82  | 1.70  | 1.50  | 7.08  | 0.45  | 2.12  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |        |       |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|--------|-------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.89   | 0.41   | 0.41   | 1.71    | 0.91   | 0.91   | 0.43  | 0.43   | 0.40   | 0.40  | 0.27   | 0.47   |
| d, Delay for Lane Group [s/veh]       | 68.67  | 45.87  | 45.80  | 371.25  | 48.48  | 48.48  | 57.58 | 26.58  | 26.00  | 65.23 | 25.39  | 29.41  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D      | E     | C      | C      | E     | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes     | No     | No     | Yes   | No     | No     | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 5.10   | 3.50   | 3.45   | 57.70   | 18.12  | 18.12  | 1.06  | 7.24   | 6.60   | 0.49  | 4.02   | 7.85   |
| 50th-Percentile Queue Length [ft/ln]  | 127.46 | 87.59  | 86.30  | 1442.47 | 453.06 | 453.06 | 26.48 | 180.99 | 165.11 | 12.25 | 100.44 | 196.37 |
| 95th-Percentile Queue Length [veh/ln] | 8.80   | 6.31   | 6.21   | 89.24   | 25.10  | 25.10  | 1.91  | 11.65  | 10.82  | 0.88  | 7.23   | 12.45  |
| 95th-Percentile Queue Length [ft/ln]  | 220.03 | 157.66 | 155.34 | 2230.88 | 627.60 | 627.60 | 47.66 | 291.30 | 270.48 | 22.05 | 180.78 | 311.28 |

**Movement, Approach, & Intersection Results**

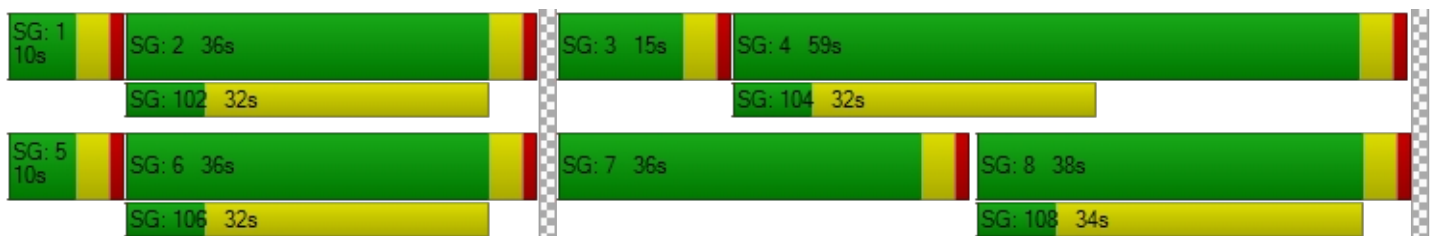
|                                 |        |       |       |        |       |       |       |       |       |       |       |       |
|---------------------------------|--------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 68.67  | 45.84 | 45.80 | 371.25 | 48.48 | 48.48 | 57.58 | 26.39 | 26.00 | 65.23 | 25.39 | 29.41 |
| Movement LOS                    | E      | D     | D     | F      | D     | D     | E     | C     | C     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 54.24  |       |       | 181.25 |       |       | 29.27 |       |       | 27.95 |       |       |
| Approach LOS                    | D      |       |       | F      |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 109.50 |       |       |        |       |       |       |       |       |       |       |       |
| Intersection LOS                | F      |       |       |        |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.837  |       |       |        |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.598 | 2.830 | 2.719 | 2.809 |
| Crosswalk LOS  | B     | C     | B     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 567   | 916   | 533   | 533   |
| d_b, Bicycle Delay [s]                                   | 30.83 | 17.62 | 32.28 | 32.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.891 | 3.202 | 2.159 | 2.191 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 6.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.819 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           | ↵↑         |        | ↑↘         |        | ↵↑             |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Curb Present                 | No         |        | No         |        | No             |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |

**Volumes**

| Name  | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
|   |            |        |            |        |                |        |
| Base Volume Input [veh/h]                   | 11         | 773    | 1402       | 11     | 9              | 38     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0              | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]                 | 11         | 773    | 1402       | 11     | 9              | 38     |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 3          | 193    | 351        | 3      | 2              | 10     |
| Total Analysis Volume [veh/h]               | 11         | 773    | 1402       | 11     | 9              | 38     |
| Presence of On-Street Parking               | No         | No     | No         | No     | No             | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0          | 0      | 0              | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        | 0          |        | 0              |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        | 0          |        | 0              |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]                 | 0          |        | 0          |        | 0              |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|------------|------------|------------|------------|------------|------------|
| Signal Group                 | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |            |            |            |            |            |            |
| Lead / Lag                   | -          | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 0          | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 0          | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 0.0        | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 0          | 94         | 94         | 0          | 26         | 0          |
| Vehicle Extension [s]        | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0          | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0          | 0          | 14         | 0          | 15         | 0          |
| Delayed Vehicle Green [s]    | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |            | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               |            | No         | No         |            | No         |            |
| Maximum Recall               |            | No         | No         |            | No         |            |
| Pedestrian Recall            |            | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | R    | C     |
|---|------|------|------|------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           | 107  | 107  | 107  | 107  | 5     |
| g / C, Green / Cycle                    | 0.89 | 0.89 | 0.89 | 0.89 | 0.04  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.41 | 0.74 | 0.01 | 0.03  |
| s, saturation flow rate [veh/h]         | 1800 | 1900 | 1900 | 1900 | 1800  |
| c, Capacity [veh/h]                     | 1074 | 1697 | 1697 | 1697 | 72    |
| d1, Uniform Delay [s]                   | 0.69 | 1.15 | 2.60 | 0.69 | 56.74 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| d2, Incremental Delay [s]               | 0.02 | 0.88 | 4.74 | 0.01 | 9.66  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |

**Lane Group Results**

|                                       |      |       |        |      |       |
|---------------------------------------|------|-------|--------|------|-------|
| X, volume / capacity                  | 0.01 | 0.46  | 0.83   | 0.01 | 0.65  |
| d, Delay for Lane Group [s/veh]       | 0.70 | 2.03  | 7.34   | 0.69 | 66.40 |
| Lane Group LOS                        | A    | A     | A      | A    | E     |
| Critical Lane Group                   | No   | No    | Yes    | No   | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.01 | 1.28  | 5.78   | 0.01 | 1.60  |
| 50th-Percentile Queue Length [ft/ln]  | 0.31 | 31.97 | 144.39 | 0.26 | 39.94 |
| 95th-Percentile Queue Length [veh/ln] | 0.02 | 2.30  | 9.72   | 0.02 | 2.88  |
| 95th-Percentile Queue Length [ft/ln]  | 0.56 | 57.54 | 242.92 | 0.48 | 71.89 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 0.70  | 2.03 | 7.34 | 0.69 | 66.40 | 66.40 |
| Movement LOS                    | A     | A    | A    | A    | E     | E     |
| d_A, Approach Delay [s/veh]     | 2.01  |      | 7.29 |      | 66.40 |       |
| Approach LOS                    | A     |      | A    |      | E     |       |
| d_I, Intersection Delay [s/veh] | 6.69  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.819 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.48 | 0.00  | 49.48 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.677 | 0.000 | 1.778 |
| Crosswalk LOS  | B     | F     | A     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1501  | 1501  | 367   |
| d_b, Bicycle Delay [s]                                   | 3.74  | 3.74  | 39.99 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.853 | 3.891 | 1.637 |
| Bicycle LOS  | C     | D     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 15.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.654 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐              |        |        | ⇐                |        |        | ⇐         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Curb Present                 |                |        |        | No               |        |        | No               |        |        | No        |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name  |        |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |        |        |        |                |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 0      | 0      | 0      | 651            | 0      | 551    | 0                | 1671   | 792    | 0                | 2127   | 221    |
| Base Volume Adjustment Factor               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00   | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0      | 0      | 0      | 651            | 0      | 551    | 0                | 1671   | 792    | 0                | 2127   | 221    |
| Peak Hour Factor                            | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0      | 0      | 0      | 163            | 0      | 138    | 0                | 418    | 198    | 0                | 532    | 55     |
| Total Analysis Volume [veh/h]               | 0      | 0      | 0      | 651            | 0      | 551    | 0                | 1671   | 792    | 0                | 2127   | 221    |
| Presence of On-Street Parking               |        |        |        | No             |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 64    | 0       | 0     | 0       | 26      | 0       | 0       | 26      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 15      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | C    | C    |
|---|-------|-------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 24    | 24    | 24    | 58   | 58   |
| g / C, Green / Cycle                    | 0.27  | 0.27  | 0.27  | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.22  | 0.22  | 0.21  | 0.29 | 0.37 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 5700 | 5700 |
| c, Capacity [veh/h]                     | 484   | 484   | 511   | 3658 | 3658 |
| d1, Uniform Delay [s]                   | 30.86 | 30.86 | 30.40 | 8.15 | 9.19 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.66  | 3.66  | 2.68  | 0.41 | 0.68 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.83   | 0.83   | 0.78   | 0.46   | 0.58   |
| d, Delay for Lane Group [s/veh]       | 34.52  | 34.52  | 33.08  | 8.57   | 9.88   |
| Lane Group LOS                        | C      | C      | C      | A      | A      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 8.41   | 8.41   | 8.18   | 4.93   | 7.10   |
| 50th-Percentile Queue Length [ft/ln]  | 210.18 | 210.18 | 204.42 | 123.17 | 177.54 |
| 95th-Percentile Queue Length [veh/ln] | 13.16  | 13.16  | 12.87  | 8.57   | 11.47  |
| 95th-Percentile Queue Length [ft/ln]  | 329.06 | 329.06 | 321.66 | 214.18 | 286.80 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|-------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 34.52 | 0.00 | 33.47 | 0.00 | 8.57 | 0.00 | 0.00 | 9.88 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |      | A    |      |      | A    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 34.04 |      |       | 8.57 |      |      | 9.88 |      |      |
| Approach LOS                    | A     |      |      | C     |      |       | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 15.25 |      |      |       |      |       |      |      |      |      |      |      |
| Intersection LOS                | B     |      |      |       |      |       |      |      |      |      |      |      |
| Intersection V/C                | 0.654 |      |      |       |      |       |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 0.000 | 2.424 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                   | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 3.543 | 2.479 | 2.729 |
| Bicycle LOS  | D     | D     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 29.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.674 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No             |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 1099           | 36     | 904    | 0               | 0      | 92     | 113              | 1545   | 606    | 0                | 1674   | 16     |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 1099           | 36     | 904    | 0               | 0      | 92     | 113              | 1545   | 606    | 0                | 1674   | 16     |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 275            | 9      | 226    | 0               | 0      | 23     | 28               | 386    | 152    | 0                | 419    | 4      |
| Total Analysis Volume [veh/h]               | 1099           | 36     | 904    | 0               | 0      | 92     | 113              | 1545   | 606    | 0                | 1674   | 16     |
| Presence of On-Street Parking               | No             |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0       | 6     | 6        | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0       | 30    | 30       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0     | 1.0   | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0     | 53    | 0     | 0     | 0       | 10    | 12       | 42      | 0       | 0       | 30      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 22      | 0       | 0       | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       |         | No    |          | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Maximum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Pedestrian Recall            |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | R     | L     | C     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 37    | 37    | 37    | 6     | 8     | 51    | 39    | 39    |
| g / C, Green / Cycle                    | 0.35  | 0.35  | 0.35  | 0.05  | 0.08  | 0.48  | 0.37  | 0.37  |
| (v / s)_i Volume / Saturation Flow Rate | 0.29  | 0.29  | 0.27  | 0.02  | 0.06  | 0.27  | 0.22  | 0.22  |
| s, saturation flow rate [veh/h]         | 3500  | 1800  | 1900  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 1224  | 630   | 665   | 206   | 138   | 2747  | 2091  | 697   |
| d1, Uniform Delay [s]                   | 31.17 | 31.18 | 30.53 | 48.19 | 47.79 | 19.36 | 27.09 | 27.09 |
| k, delay calibration                    | 0.11  | 0.18  | 0.15  | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.43  | 4.45  | 2.85  | 1.52  | 11.00 | 0.84  | 1.31  | 3.89  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.82   | 0.82   | 0.78   | 0.45  | 0.82   | 0.56   | 0.61   | 0.61   |
| d, Delay for Lane Group [s/veh]       | 32.59  | 35.63  | 33.38  | 49.71 | 58.79  | 20.19  | 28.40  | 30.98  |
| Lane Group LOS                        | C      | D      | C      | D     | E      | C      | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes   | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 11.58  | 12.46  | 11.96  | 1.21  | 3.32   | 8.85   | 8.71   | 9.21   |
| 50th-Percentile Queue Length [ft/ln]  | 289.47 | 311.48 | 299.11 | 30.23 | 83.12  | 221.22 | 217.82 | 230.27 |
| 95th-Percentile Queue Length [veh/ln] | 17.16  | 18.25  | 17.64  | 2.18  | 5.98   | 13.73  | 13.55  | 14.19  |
| 95th-Percentile Queue Length [ft/ln]  | 428.99 | 456.21 | 440.92 | 54.42 | 149.61 | 343.18 | 338.84 | 354.71 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |      |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 32.82 | 35.63 | 34.36 | 0.00  | 0.00 | 49.71 | 58.79 | 20.19 | 0.00 | 0.00  | 29.03 | 30.98 |
| Movement LOS                    | C     | D     | C     |       |      | D     | E     | C     |      |       | C     | C     |
| d_A, Approach Delay [s/veh]     | 33.56 |       |       | 49.71 |      |       | 22.82 |       |      | 29.05 |       |       |
| Approach LOS                    | C     |       |       | D     |      |       | C     |       |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 29.19 |       |       |       |      |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |      |       |       |       |      |       |       |       |
| Intersection V/C                | 0.674 |       |       |       |      |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.11 | 42.11 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.705 | 2.031 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 933   | 114   | 723   | 495   |
| d_b, Bicycle Delay [s]                                   | 14.96 | 46.70 | 21.40 | 29.75 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.924 | 1.560 | 2.472 | 2.257 |
| Bicycle LOS  | E     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 31.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.806 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                 |        |        | No                 |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   | 164                | 227    | 79     | 181                | 360    | 177    | 227              | 2100   | 112    | 100              | 1818   | 108    |
| Base Volume Input [veh/h]                   | 164                | 227    | 79     | 181                | 360    | 177    | 227              | 2100   | 112    | 100              | 1818   | 108    |
| Base Volume Adjustment Factor               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 164                | 227    | 79     | 181                | 360    | 177    | 227              | 2100   | 112    | 100              | 1818   | 108    |
| Peak Hour Factor                            | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 41                 | 57     | 20     | 45                 | 90     | 44     | 57               | 525    | 28     | 25               | 455    | 27     |
| Total Analysis Volume [veh/h]               | 164                | 227    | 79     | 181                | 360    | 177    | 227              | 2100   | 112    | 100              | 1818   | 108    |
| Presence of On-Street Parking               | No                 |        | No     | No                 |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 15       | 44      | 0       | 20       | 45      | 0       | 11       | 36      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 29      | 0       | 0        | 26      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 22    | 22    | 8     | 24    | 24    | 16    | 57    | 57    | 7     | 49    | 49    |
| g / C, Green / Cycle                    | 0.05  | 0.20  | 0.20  | 0.07  | 0.21  | 0.21  | 0.14  | 0.52  | 0.52  | 0.06  | 0.44  | 0.44  |
| (v / s)_i Volume / Saturation Flow Rate | 0.05  | 0.08  | 0.08  | 0.05  | 0.19  | 0.09  | 0.13  | 0.38  | 0.40  | 0.06  | 0.25  | 0.26  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  | 1800  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 194   | 377   | 377   | 248   | 406   | 406   | 257   | 1980  | 990   | 116   | 2524  | 841   |
| d1, Uniform Delay [s]                   | 51.54 | 38.57 | 38.35 | 50.13 | 41.97 | 37.52 | 46.30 | 20.48 | 20.95 | 51.02 | 22.78 | 23.25 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.71  | 0.74  | 0.66  | 4.14  | 6.59  | 0.74  | 9.71  | 2.48  | 5.54  | 16.62 | 0.92  | 3.13  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.85   | 0.42   | 0.39   | 0.73   | 0.89   | 0.44   | 0.88   | 0.74   | 0.76   | 0.86   | 0.56   | 0.60   |
| d, Delay for Lane Group [s/veh]       | 61.25  | 39.32  | 39.01  | 54.27  | 48.56  | 38.25  | 56.01  | 22.97  | 26.49  | 67.64  | 23.70  | 26.38  |
| Lane Group LOS                        | E      | D      | D      | D      | D      | D      | E      | C      | C      | E      | C      | C      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.50   | 3.81   | 3.54   | 2.58   | 10.14  | 4.21   | 6.75   | 14.55  | 16.20  | 3.26   | 9.14   | 10.40  |
| 50th-Percentile Queue Length [ft/ln]  | 62.47  | 95.18  | 88.44  | 64.48  | 253.49 | 105.30 | 168.85 | 363.64 | 405.07 | 81.48  | 228.50 | 260.02 |
| 95th-Percentile Queue Length [veh/ln] | 4.50   | 6.85   | 6.37   | 4.64   | 15.36  | 7.58   | 11.02  | 20.80  | 22.80  | 5.87   | 14.10  | 15.69  |
| 95th-Percentile Queue Length [ft/ln]  | 112.44 | 171.32 | 159.19 | 116.06 | 384.05 | 189.45 | 275.40 | 520.01 | 570.11 | 146.67 | 352.46 | 392.24 |

**Movement, Approach, & Intersection Results**

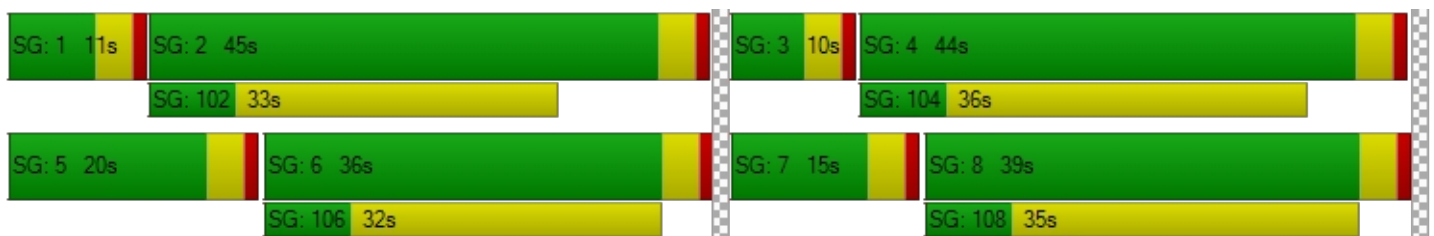
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 61.25 | 39.22 | 39.01 | 54.27 | 48.56 | 38.25 | 56.01 | 24.04 | 26.49 | 67.64 | 24.28 | 26.38 |
| Movement LOS                    | E     | D     | D     | D     | D     | D     | E     | C     | C     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 46.88 |       |       | 47.46 |       |       | 27.13 |       |       | 26.53 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 31.14 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.806 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 44.58 |  |  | 44.58 |  |  | 44.58 |  |  | 44.58 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.513 |  |  | 2.670 |  |  | 3.295 |  |  | 3.270 |  |  |
| Crosswalk LOS  | B     |  |  | B     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 636   |  |  | 727   |  |  | 745   |  |  | 582   |  |  |
| d_b, Bicycle Delay [s]                                   | 25.59 |  |  | 22.29 |  |  | 21.66 |  |  | 27.68 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.947 |  |  | 2.744 |  |  | 2.901 |  |  | 2.395 |  |  |
| Bicycle LOS  | A     |  |  | B     |  |  | C     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.701 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No               |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name  | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 199              | 13     | 159    | 27              | 31     | 15     | 14               | 2066   | 398    | 191              | 1675   | 35     |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 199              | 13     | 159    | 27              | 31     | 15     | 14               | 2066   | 398    | 191              | 1675   | 35     |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 50               | 3      | 40     | 7               | 8      | 4      | 4                | 517    | 100    | 48               | 419    | 9      |
| Total Analysis Volume [veh/h]               | 199              | 13     | 159    | 27              | 31     | 15     | 14               | 2066   | 398    | 191              | 1675   | 35     |
| Presence of On-Street Parking               | No               |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 26    | 0     | 0     | 10    | 0     | 10       | 32      | 0       | 22       | 44      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0        | 21      | 0       | 0        | 14      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | R     | L     | C    | C    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 10    | 10    | 10    | 5     | 5     | 2     | 47    | 47    | 12    | 57   | 57   |
| g / C, Green / Cycle                    | 0.11  | 0.11  | 0.11  | 0.06  | 0.06  | 0.02  | 0.53  | 0.53  | 0.13  | 0.63 | 0.63 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06  | 0.06  | 0.08  | 0.02  | 0.02  | 0.01  | 0.36  | 0.21  | 0.11  | 0.30 | 0.31 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 1800  | 1900  | 1800  | 5700  | 1900  | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 203   | 203   | 214   | 103   | 109   | 38    | 2988  | 996   | 231   | 2400 | 1200 |
| d1, Uniform Delay [s]                   | 37.71 | 37.72 | 38.74 | 40.69 | 41.08 | 43.55 | 16.01 | 12.91 | 38.31 | 8.69 | 8.84 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 2.06  | 2.09  | 5.01  | 1.34  | 2.61  | 5.86  | 1.34  | 1.20  | 7.30  | 0.66 | 1.42 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.52   | 0.52   | 0.74   | 0.26  | 0.42  | 0.37  | 0.69   | 0.40   | 0.83   | 0.47   | 0.49   |
| d, Delay for Lane Group [s/veh]       | 39.78  | 39.81  | 43.75  | 42.03 | 43.68 | 49.41 | 17.35  | 14.11  | 45.61  | 9.35   | 10.26  |
| Lane Group LOS                        | D      | D      | D      | D     | D     | D     | B      | B      | D      | A      | B      |
| Critical Lane Group                   | No     | No     | Yes    | No    | Yes   | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.29   | 2.30   | 3.65   | 0.61  | 1.06  | 0.37  | 10.08  | 4.86   | 4.52   | 5.25   | 5.80   |
| 50th-Percentile Queue Length [ft/ln]  | 57.17  | 57.53  | 91.31  | 15.16 | 26.39 | 9.18  | 251.97 | 121.41 | 112.90 | 131.30 | 144.97 |
| 95th-Percentile Queue Length [veh/ln] | 4.12   | 4.14   | 6.57   | 1.09  | 1.90  | 0.66  | 15.29  | 8.47   | 8.00   | 9.01   | 9.75   |
| 95th-Percentile Queue Length [ft/ln]  | 102.91 | 103.55 | 164.35 | 27.29 | 47.50 | 16.52 | 382.13 | 211.76 | 200.02 | 225.26 | 243.71 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |      |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| d_M, Delay for Movement [s/veh] | 39.79 | 39.81 | 43.75 | 42.03 | 43.68 | 43.68 | 49.41 | 17.35 | 14.11 | 45.61 | 9.65 | 10.26 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | B     | B     | D     | A    | B     |
| d_A, Approach Delay [s/veh]     | 41.49 |       |       | 43.07 |       |       | 17.01 |       |       | 13.28 |      |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       |       | B     |      |       |
| d_I, Intersection Delay [s/veh] | 17.81 |       |       |       |       |       |       |       |       |       |      |       |
| Intersection LOS                | B     |       |       |       |       |       |       |       |       |       |      |       |
| Intersection V/C                | 0.701 |       |       |       |       |       |       |       |       |       |      |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.72 | 34.72 | 0.00  | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.372 | 1.984 | 0.000 | 3.172 |
| Crosswalk LOS  | B     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 488   | 133   | 622   | 888   |
| d_b, Bicycle Delay [s]                                   | 25.73 | 39.24 | 21.40 | 13.92 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.172 | 1.680 | 2.923 | 2.605 |
| Bicycle LOS  | B     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 27.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.674 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O T             |        |        | T O T             |        |        | T O T            |        |        | T O T            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |



**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                   |        |        |                   |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 192               | 263    | 94     | 352               | 693    | 122    | 148              | 1441   | 263    | 77               | 1216   | 96     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 192               | 263    | 94     | 352               | 693    | 122    | 148              | 1441   | 263    | 77               | 1216   | 96     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 48                | 66     | 24     | 88                | 173    | 31     | 37               | 360    | 66     | 19               | 304    | 24     |
| Total Analysis Volume [veh/h]               | 192               | 263    | 94     | 352               | 693    | 122    | 148              | 1441   | 263    | 77               | 1216   | 96     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 11       | 30      | 0       | 16       | 35      | 0       | 10       | 39      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 19      | 0       | 0        | 19      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 7     | 16    | 16    | 11    | 21    | 21    | 6     | 46    | 46    | 5     | 46    | 46    |
| g / C, Green / Cycle                    | 0.07  | 0.17  | 0.17  | 0.12  | 0.22  | 0.22  | 0.06  | 0.49  | 0.49  | 0.06  | 0.48  | 0.48  |
| (v / s)_i Volume / Saturation Flow Rate | 0.05  | 0.10  | 0.09  | 0.10  | 0.18  | 0.06  | 0.04  | 0.30  | 0.29  | 0.02  | 0.23  | 0.23  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 261   | 322   | 322   | 425   | 821   | 410   | 220   | 1844  | 922   | 196   | 1818  | 909   |
| d1, Uniform Delay [s]                   | 43.12 | 36.39 | 36.10 | 40.85 | 35.77 | 31.25 | 43.63 | 18.04 | 17.85 | 43.35 | 16.79 | 16.85 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.03  | 1.63  | 1.38  | 4.21  | 2.48  | 0.40  | 3.55  | 1.58  | 2.95  | 1.28  | 0.91  | 1.85  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.74   | 0.58   | 0.53   | 0.83   | 0.84   | 0.30   | 0.67  | 0.62   | 0.61   | 0.39  | 0.48   | 0.48   |
| d, Delay for Lane Group [s/veh]       | 47.15  | 38.02  | 37.48  | 45.06  | 38.25  | 31.65  | 47.18 | 19.62  | 20.80  | 44.63 | 17.70  | 18.70  |
| Lane Group LOS                        | D      | D      | D      | D      | D      | C      | D     | B      | C      | D     | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No    | Yes    | No     | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.34   | 4.06   | 3.72   | 4.23   | 7.84   | 2.37   | 1.80  | 9.16   | 9.20   | 0.90  | 6.37   | 6.70   |
| 50th-Percentile Queue Length [ft/ln]  | 58.42  | 101.45 | 93.09  | 105.70 | 195.98 | 59.26  | 44.98 | 229.02 | 230.08 | 22.58 | 159.21 | 167.47 |
| 95th-Percentile Queue Length [veh/ln] | 4.21   | 7.30   | 6.70   | 7.60   | 12.43  | 4.27   | 3.24  | 14.12  | 14.18  | 1.63  | 10.51  | 10.94  |
| 95th-Percentile Queue Length [ft/ln]  | 105.15 | 182.61 | 167.56 | 190.00 | 310.77 | 106.66 | 80.96 | 353.11 | 354.46 | 40.65 | 262.68 | 273.59 |

**Movement, Approach, & Intersection Results**

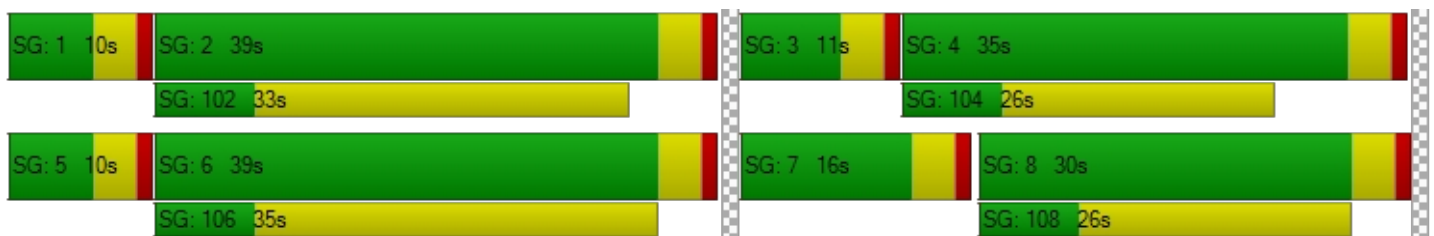
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 47.15 | 37.86 | 37.48 | 45.06 | 38.25 | 31.65 | 47.18 | 19.87 | 20.80 | 44.63 | 17.98 | 18.70 |
| Movement LOS                    | D     | D     | D     | D     | D     | C     | D     | B     | C     | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 41.04 |       |       | 39.61 |       |       | 22.18 |       |       | 19.51 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | B     |       |       |
| d_I, Intersection Delay [s/veh] | 27.62 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.674 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.18 | 37.18 | 37.18 | 37.18 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.712 | 2.829 | 3.140 | 3.127 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 547   | 652   | 736   | 736   |
| d_b, Bicycle Delay [s]                                   | 25.09 | 21.59 | 18.98 | 18.98 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.013 | 2.522 | 2.578 | 2.324 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.590 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]       |        |        | [Diagram]       |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                 |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 144             | 201    | 129    | 299             | 314    | 214    | 205              | 1100   | 99     | 127              | 1706   | 158    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 144             | 201    | 129    | 299             | 314    | 214    | 205              | 1100   | 99     | 127              | 1706   | 158    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 36              | 50     | 32     | 75              | 79     | 54     | 51               | 275    | 25     | 32               | 427    | 40     |
| Total Analysis Volume [veh/h]               | 144             | 201    | 129    | 299             | 314    | 214    | 205              | 1100   | 99     | 127              | 1706   | 158    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 46      | 0       | 22       | 58      | 0       | 13       | 41      | 0       | 11       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 35      | 0       | 0        | 37      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 11    | 11    | 13    | 17    | 17    | 9     | 75    | 75   | 6     | 72    | 72    |
| g / C, Green / Cycle                    | 0.05  | 0.09  | 0.09  | 0.10  | 0.14  | 0.14  | 0.07  | 0.62  | 0.62 | 0.05  | 0.60  | 0.60  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.05  | 0.07  | 0.09  | 0.08  | 0.11  | 0.06  | 0.19  | 0.05 | 0.04  | 0.30  | 0.08  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 5700  | 1900 | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 178   | 341   | 170   | 366   | 545   | 273   | 262   | 3534  | 1178 | 184   | 3407  | 1136  |
| d1, Uniform Delay [s]                   | 56.41 | 52.53 | 53.37 | 52.63 | 48.01 | 49.63 | 54.58 | 10.74 | 9.14 | 55.93 | 13.87 | 10.60 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 8.52  | 1.63  | 6.70  | 4.50  | 0.96  | 4.95  | 5.09  | 0.23  | 0.14 | 4.60  | 0.53  | 0.26  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |       |       |        |       |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|-------|
| X, volume / capacity                  | 0.81   | 0.59   | 0.76   | 0.82   | 0.58   | 0.78   | 0.78   | 0.31   | 0.08  | 0.69  | 0.50   | 0.14  |
| d, Delay for Lane Group [s/veh]       | 64.93  | 54.15  | 60.07  | 57.13  | 48.97  | 54.58  | 59.67  | 10.97  | 9.28  | 60.52 | 14.40  | 10.85 |
| Lane Group LOS                        | E      | D      | E      | E      | D      | D      | E      | B      | A     | E     | B      | B     |
| Critical Lane Group                   | Yes    | No     | No     | No     | No     | Yes    | Yes    | No     | No    | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 2.37   | 2.99   | 4.12   | 4.64   | 4.47   | 6.57   | 3.23   | 4.51   | 1.07  | 2.01  | 8.69   | 1.89  |
| 50th-Percentile Queue Length [ft/ln]  | 59.28  | 74.81  | 103.00 | 115.97 | 111.69 | 164.19 | 80.77  | 112.72 | 26.63 | 50.24 | 217.31 | 47.28 |
| 95th-Percentile Queue Length [veh/ln] | 4.27   | 5.39   | 7.42   | 8.17   | 7.93   | 10.77  | 5.82   | 7.99   | 1.92  | 3.62  | 13.53  | 3.40  |
| 95th-Percentile Queue Length [ft/ln]  | 106.70 | 134.66 | 185.39 | 204.28 | 198.34 | 269.26 | 145.38 | 199.78 | 47.93 | 90.43 | 338.19 | 85.10 |



**Movement, Approach, & Intersection Results**

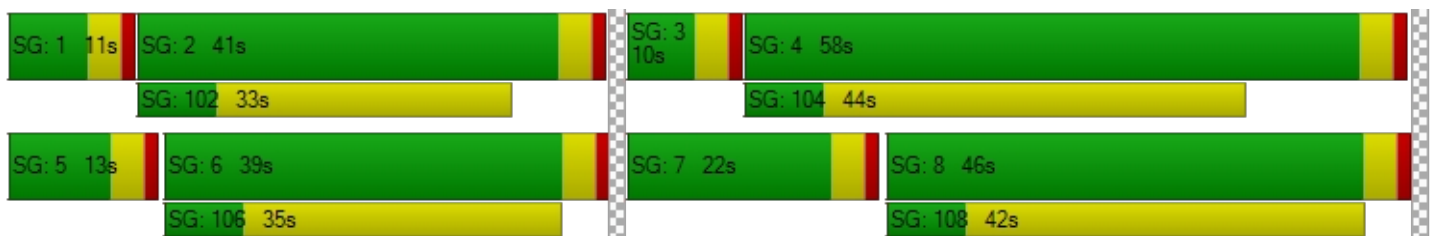
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 64.93 | 54.15 | 60.07 | 57.13 | 48.97 | 54.58 | 59.67 | 10.97 | 9.28 | 60.52 | 14.40 | 10.85 |
| Movement LOS                    | E     | D     | E     | E     | D     | D     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 59.04 |       |       | 53.37 |       |       | 17.96 |       |      | 17.06 |       |       |
| Approach LOS                    | E     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 27.96 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.590 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.749 |  |  | 2.801 |  |  | 3.239 |  |  | 3.244 |  |  |
| Crosswalk LOS  | B     |  |  | C     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 700   |  |  | 900   |  |  | 617   |  |  | 583   |  |  |
| d_b, Bicycle Delay [s]                                   | 25.36 |  |  | 18.16 |  |  | 28.72 |  |  | 30.12 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.951 |  |  | 2.242 |  |  | 2.332 |  |  | 2.655 |  |  |
| Bicycle LOS  | A     |  |  | B     |  |  | B     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 237.6 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.810 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T      |        |        | T T T      |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |            |        |        |            |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 267        | 206    | 152    | 916        | 506    | 23     | 38               | 1333   | 249    | 280              | 1564   | 586    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 267        | 206    | 152    | 916        | 506    | 23     | 38               | 1333   | 249    | 280              | 1564   | 586    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 67         | 52     | 38     | 229        | 127    | 6      | 10               | 333    | 62     | 70               | 391    | 147    |
| Total Analysis Volume [veh/h]               | 267        | 206    | 152    | 916        | 506    | 23     | 38               | 1333   | 249    | 280              | 1564   | 586    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 15       | 53      | 0       | 12       | 50      | 0       | 10       | 45      | 0       | 10       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 42      | 0       | 0        | 36      | 0       | 0        | 34      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L       | C     | R     | L     | C     | C     | L      | C     | R     |
|---|-------|-------|-------|---------|-------|-------|-------|-------|-------|--------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120     | 120   | 120   | 120   | 120   | 120   | 120    | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00    | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00    | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 11    | 22    | 22    | 8       | 19    | 19    | 4     | 68    | 68    | 6      | 70    | 70    |
| g / C, Green / Cycle                    | 0.09  | 0.18  | 0.18  | 0.07    | 0.16  | 0.16  | 0.04  | 0.57  | 0.57  | 0.05   | 0.58  | 0.58  |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.05  | 0.08  | 0.26    | 0.13  | 0.01  | 0.02  | 0.28  | 0.27  | 0.08   | 0.27  | 0.31  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500    | 3800  | 1900  | 1800  | 3800  | 1900  | 3500   | 5700  | 1900  |
| c, Capacity [veh/h]                     | 323   | 689   | 345   | 236     | 595   | 298   | 66    | 2155  | 1078  | 178    | 3313  | 1104  |
| d1, Uniform Delay [s]                   | 53.56 | 42.53 | 43.72 | 55.99   | 49.26 | 43.23 | 56.90 | 15.63 | 15.44 | 56.98  | 14.51 | 15.23 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11   | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.40  | 0.24  | 0.89  | 1300.92 | 3.53  | 0.11  | 7.60  | 0.81  | 1.53  | 265.15 | 0.49  | 1.83  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.83   | 0.30   | 0.44   | 3.89    | 0.85   | 0.08  | 0.57  | 0.49   | 0.48   | 1.58   | 0.47   | 0.53   |
| d, Delay for Lane Group [s/veh]       | 58.96  | 42.77  | 44.61  | 1356.91 | 52.79  | 43.34 | 64.50 | 16.44  | 16.97  | 322.13 | 15.00  | 17.06  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D     | E     | B      | B      | F      | B      | B      |
| Critical Lane Group                   | No     | No     | Yes    | Yes     | No     | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.20   | 2.68   | 4.12   | 46.16   | 7.66   | 0.60  | 1.28  | 8.77   | 8.62   | 9.23   | 8.09   | 9.93   |
| 50th-Percentile Queue Length [ft/ln]  | 105.03 | 67.04  | 102.95 | 1153.92 | 191.47 | 14.92 | 31.88 | 219.37 | 215.61 | 230.87 | 202.25 | 248.16 |
| 95th-Percentile Queue Length [veh/ln] | 7.56   | 4.83   | 7.41   | 70.04   | 12.20  | 1.07  | 2.30  | 13.63  | 13.44  | 15.81  | 12.75  | 15.09  |
| 95th-Percentile Queue Length [ft/ln]  | 189.05 | 120.67 | 185.31 | 1751.01 | 304.94 | 26.85 | 57.38 | 340.83 | 336.02 | 395.27 | 318.87 | 377.33 |

**Movement, Approach, & Intersection Results**

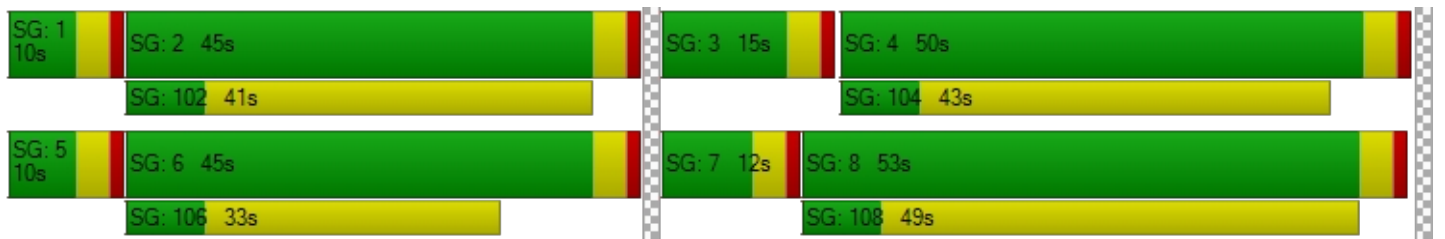
|                                 |        |       |       |         |       |       |       |       |       |        |       |       |
|---------------------------------|--------|-------|-------|---------|-------|-------|-------|-------|-------|--------|-------|-------|
| d_M, Delay for Movement [s/veh] | 58.96  | 42.77 | 44.61 | 1356.91 | 52.79 | 43.34 | 64.50 | 16.55 | 16.97 | 322.13 | 15.00 | 17.06 |
| Movement LOS                    | E      | D     | D     | F       | D     | D     | E     | B     | B     | F      | B     | B     |
| d_A, Approach Delay [s/veh]     | 50.13  |       |       | 879.34  |       |       | 17.74 |       |       | 50.88  |       |       |
| Approach LOS                    | D      |       |       | F       |       |       | B     |       |       | D      |       |       |
| d_I, Intersection Delay [s/veh] | 237.64 |       |       |         |       |       |       |       |       |        |       |       |
| Intersection LOS                | F      |       |       |         |       |       |       |       |       |        |       |       |
| Intersection V/C                | 0.810  |       |       |         |       |       |       |       |       |        |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.839 | 2.925 | 3.092 | 3.386 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 816   | 766   | 683   | 683   |
| d_b, Bicycle Delay [s]                                   | 21.02 | 22.83 | 26.02 | 26.02 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.075 | 2.752 | 2.451 | 2.896 |
| Bicycle LOS  | B     | C     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 40.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.842 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                         |        |        |                         |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 350                     | 655    | 337    | 607                     | 439    | 16     | 42           | 1599   | 288    | 436          | 1286   | 763    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 350                     | 655    | 337    | 607                     | 439    | 16     | 42           | 1599   | 288    | 436          | 1286   | 763    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 88                      | 164    | 84     | 152                     | 110    | 4      | 11           | 400    | 72     | 109          | 322    | 191    |
| Total Analysis Volume [veh/h]               | 350                     | 655    | 337    | 607                     | 439    | 16     | 42           | 1599   | 288    | 436          | 1286   | 763    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| Bicycle Volume [bicycles/h]                 |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 17       | 34      | 0       | 27       | 44      | 0       | 10       | 39      | 0       | 20       | 49      | 49      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 0       | 0       | 0        | 33      | 0       | 0        | 28      | 0       | 0        | 22      | 22      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  |
| g_i, Effective Green Time [s]           | 13    | 25    | 25    | 25    | 23    | 35    | 35    | 5     | 40    | 40    | 16    | 51    | 78    |
| g / C, Green / Cycle                    | 0.11  | 0.21  | 0.21  | 0.21  | 0.19  | 0.29  | 0.29  | 0.04  | 0.33  | 0.33  | 0.13  | 0.43  | 0.65  |
| (v / s)_i Volume / Saturation Flow Rate | 0.10  | 0.18  | 0.18  | 0.16  | 0.17  | 0.12  | 0.12  | 0.01  | 0.25  | 0.25  | 0.12  | 0.23  | 0.40  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 5700  | 1900  | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 381   | 396   | 396   | 396   | 671   | 553   | 553   | 135   | 1897  | 632   | 468   | 2440  | 1241  |
| d1, Uniform Delay [s]                   | 52.97 | 46.05 | 45.89 | 44.73 | 47.44 | 34.28 | 34.22 | 56.17 | 35.56 | 35.49 | 51.46 | 25.36 | 12.07 |
| k, delay calibration                    | 0.11  | 0.25  | 0.25  | 0.18  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.23  | 13.39 | 11.96 | 5.13  | 4.91  | 0.49  | 0.48  | 1.30  | 2.74  | 7.69  | 8.80  | 0.82  | 2.29  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |       |        |        |        |       |        |        |        |        |        |
|---------------------------------------|-------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.92  | 0.88  | 0.86  | 0.76  | 0.90   | 0.41   | 0.41   | 0.31  | 0.75   | 0.74   | 0.93   | 0.53   | 0.61   |
| d, Delay for Lane Group [s/veh]       | 62.20 | 59.44 | 57.85 | 49.86 | 52.35  | 34.77  | 34.71  | 57.47 | 38.30  | 43.18  | 60.26  | 26.18  | 14.35  |
| Lane Group LOS                        | E     | E     | E     | D     | D      | C      | C      | E     | D      | D      | E      | C      | B      |
| Critical Lane Group                   | No    | Yes   | No    | No    | Yes    | No     | No     | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 5.71  | 11.48 | 11.13 | 9.01  | 9.29   | 5.47   | 5.40   | 0.64  | 12.65  | 13.42  | 7.05   | 9.13   | 11.83  |
| 50th-Percentile Queue Length [ft/ln]  | 142.6 | 286.9 | 278.3 | 225.1 | 232.35 | 136.85 | 134.94 | 16.12 | 316.22 | 335.47 | 176.20 | 228.37 | 295.86 |
| 95th-Percentile Queue Length [veh/ln] | 9.62  | 17.03 | 16.61 | 13.93 | 14.29  | 9.31   | 9.21   | 1.16  | 18.48  | 19.43  | 11.40  | 14.09  | 17.48  |
| 95th-Percentile Queue Length [ft/ln]  | 240.6 | 425.8 | 415.1 | 348.2 | 357.35 | 232.78 | 230.19 | 29.01 | 462.04 | 485.65 | 285.05 | 352.29 | 436.90 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 62.20 | 58.70 | 50.03 | 52.35 | 34.74 | 34.71 | 57.47 | 38.85 | 43.18 | 60.26 | 26.18 | 14.35 |
| Movement LOS                    | E     | E     | D     | D     | C     | C     | E     | D     | D     | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 57.60 |       |       | 44.81 |       |       | 39.90 |       |       | 28.53 |       |       |
| Approach LOS                    | E     |       |       | D     |       |       | D     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 40.00 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.842 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.957 | 2.876 | 3.251 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 500   | 666   | 583   | 750   |
| d_b, Bicycle Delay [s]                                   | 33.76 | 26.68 | 30.12 | 23.45 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.667 | 2.436 | 2.355 | 2.926 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**




|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 18.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.632 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps  |        |        | Lambert Road  |        |        | Lambert Road  |        |        |
|------------------------------|----------------|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound     |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |                |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1   | 0      | 1      | 0   | 0      | 1      | 1   | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 |                |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes            |        |        | Yes   |        |        | No  |        |        | No  |        |        |

**Volumes**

| Name  | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 0              | 0      | 0      | 454            | 0      | 855    | 0            | 1430   | 835    | 251          | 1740   | 0      |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0              | 0      | 0      | 454            | 0      | 855    | 0            | 1430   | 835    | 251          | 1740   | 0      |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0              | 0      | 0      | 114            | 0      | 214    | 0            | 358    | 209    | 63           | 435    | 0      |
| Total Analysis Volume [veh/h]               | 0              | 0      | 0      | 454            | 0      | 855    | 0            | 1430   | 835    | 251          | 1740   | 0      |
| Presence of On-Street Parking               |                |        |        | No             |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 54    | 0       | 0     | 0       | 23      | 0       | 13       | 36      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 12      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              |  | L     | R     | C     | R     | L     | C    |
|---|--|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     |  | 90    | 90    | 90    | 90    | 90    | 90   |
| L, Total Lost Time per Cycle [s]        |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 |
| g_i, Effective Green Time [s]           |  | 26    | 26    | 44    | 44    | 8     | 56   |
| g / C, Green / Cycle                    |  | 0.28  | 0.28  | 0.49  | 0.49  | 0.09  | 0.63 |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.13  | 0.23  | 0.25  | 0.22  | 0.07  | 0.31 |
| s, saturation flow rate [veh/h]         |  | 3500  | 3800  | 5700  | 3800  | 3500  | 5700 |
| c, Capacity [veh/h]                     |  | 995   | 1080  | 2787  | 1858  | 327   | 3573 |
| d1, Uniform Delay [s]                   |  | 26.50 | 29.76 | 15.69 | 15.07 | 39.86 | 9.02 |
| k, delay calibration                    |  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 |
| l, Upstream Filtering Factor            |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               |  | 0.33  | 1.35  | 0.68  | 0.79  | 3.78  | 0.48 |
| d3, Initial Queue Delay [s]             |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |  |        |        |        |        |        |        |
|---------------------------------------|--|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  |  | 0.46   | 0.79   | 0.51   | 0.45   | 0.77   | 0.49   |
| d, Delay for Lane Group [s/veh]       |  | 26.83  | 31.11  | 16.37  | 15.86  | 43.64  | 9.50   |
| Lane Group LOS                        |  | C      | C      | B      | B      | D      | A      |
| Critical Lane Group                   |  | No     | Yes    | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] |  | 3.96   | 8.49   | 6.46   | 5.49   | 2.85   | 5.54   |
| 50th-Percentile Queue Length [ft/ln]  |  | 99.06  | 212.14 | 161.58 | 137.28 | 71.20  | 138.43 |
| 95th-Percentile Queue Length [veh/ln] |  | 7.13   | 13.26  | 10.63  | 9.33   | 5.13   | 9.40   |
| 95th-Percentile Queue Length [ft/ln]  |  | 178.30 | 331.58 | 265.81 | 233.36 | 128.16 | 234.90 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |       |       |       |       |      |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|-------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 26.83 | 0.00 | 31.11 | 0.00  | 16.37 | 15.86 | 43.64 | 9.50 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | B     | B     | D     | A    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 29.62 |      |       | 16.18 |       |       | 13.80 |      |      |
| Approach LOS                    | A     |      |      | C     |      |       | B     |       |       | B     |      |      |
| d_I, Intersection Delay [s/veh] | 18.49 |      |      |       |      |       |       |       |       |       |      |      |
| Intersection LOS                | B     |      |      |       |      |       |       |       |       |       |      |      |
| Intersection V/C                | 0.632 |      |      |       |      |       |       |       |       |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.244 | 2.450 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1111  | 422   | 711   |
| d_b, Bicycle Delay [s]                                   | 45.01 | 8.90  | 28.02 | 18.70 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 1.560 | 2.805 | 2.655 |
| Bicycle LOS  | D     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 13.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.516 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐            |        |        |                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No             |        |        |                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 676            | 0      | 301    | 0              | 0      | 0      | 0            | 1528   | 576    | 0            | 1137   | 523    |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 676            | 0      | 301    | 0              | 0      | 0      | 0            | 1528   | 576    | 0            | 1137   | 523    |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]              | 169            | 0      | 75     | 0              | 0      | 0      | 0            | 382    | 144    | 0            | 284    | 0      |
| Total Analysis Volume [veh/h]               | 676            | 0      | 301    | 0              | 0      | 0      | 0            | 1528   | 576    | 0            | 1137   | 0      |
| Presence of On-Street Parking               | No             |        | No     |                |        |        | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Split | Permiss | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Unsigna |
|------------------------------|-------|---------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 3     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |         |       |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag                   | Lead  | -       | -     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 6     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 30    | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 54    | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 36      | 0       | 0       | 36      | 0       |
| Vehicle Extension [s]        | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 7       | 0       | 0       | 0       | 0       |
| Pedestrian Clearance [s]     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 25      | 0       | 0       | 0       | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Maximum Recall               | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Pedestrian Recall            | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | R     |  | C    | C    | R    | C    |
|---|-------|-------|--|------|------|------|------|
| C, Cycle Length [s]                     | 90    | 90    |  | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 21    | 21    |  | 60   | 60   | 60   | 60   |
| g / C, Green / Cycle                    | 0.24  | 0.24  |  | 0.67 | 0.67 | 0.67 | 0.67 |
| (v / s)_i Volume / Saturation Flow Rate | 0.19  | 0.16  |  | 0.28 | 0.28 | 0.28 | 0.20 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 3800 | 1900 | 1900 | 5700 |
| c, Capacity [veh/h]                     | 833   | 452   |  | 2558 | 1279 | 1279 | 3836 |
| d1, Uniform Delay [s]                   | 32.33 | 31.00 |  | 6.64 | 6.64 | 6.64 | 6.00 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.50 | 0.50 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.97  | 1.70  |  | 0.49 | 0.98 | 0.98 | 0.20 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |  |        |        |        |        |
|---------------------------------------|--------|--------|--|--------|--------|--------|--------|
| X, volume / capacity                  | 0.81   | 0.67   |  | 0.41   | 0.41   | 0.41   | 0.30   |
| d, Delay for Lane Group [s/veh]       | 34.30  | 32.69  |  | 7.13   | 7.62   | 7.62   | 6.19   |
| Lane Group LOS                        | C      | C      |  | A      | A      | A      | A      |
| Critical Lane Group                   | Yes    | No     |  | Yes    | No     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 6.99   | 5.99   |  | 4.02   | 4.20   | 4.20   | 2.58   |
| 50th-Percentile Queue Length [ft/ln]  | 174.71 | 149.63 |  | 100.58 | 104.92 | 104.92 | 64.38  |
| 95th-Percentile Queue Length [veh/ln] | 11.32  | 10.00  |  | 7.24   | 7.55   | 7.55   | 4.64   |
| 95th-Percentile Queue Length [ft/ln]  | 283.10 | 249.93 |  | 181.04 | 188.85 | 188.85 | 115.89 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 34.30 | 0.00 | 32.69 | 0.00 | 0.00 | 0.00 | 0.00 | 7.17 | 7.62 | 0.00 | 6.19 | 0.00 |
| Movement LOS                    | C     |      | C     |      |      |      |      | A    | A    |      | A    |      |
| d_A, Approach Delay [s/veh]     | 33.81 |      |       | 0.00 |      |      | 7.37 |      |      | 6.19 |      |      |
| Approach LOS                    | C     |      |       | A    |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 13.18 |      |       |      |      |      |      |      |      |      |      |      |
| Intersection LOS                | B     |      |       |      |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.516 |      |       |      |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.63 | 0.00  | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.602 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | F     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1112  | 0     | 712   | 712   |
| d_b, Bicycle Delay [s]                                   | 8.86  | 44.96 | 18.65 | 18.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.560 | 4.132 | 2.717 | 2.185 |
| Bicycle LOS  | A     | D     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 14.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.589 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | +            |        |        | +            |        |        | +            |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No           |        |        | No           |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name  | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |              |        |        |              |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 124          | 0      | 30     | 120          | 0      | 447    | 204          | 2085   | 42     | 16           | 1629   | 60     |
| Base Volume Adjustment Factor               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 124          | 0      | 30     | 120          | 0      | 447    | 204          | 2085   | 42     | 16           | 1629   | 60     |
| Peak Hour Factor                            | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 31           | 0      | 8      | 30           | 0      | 112    | 51           | 521    | 11     | 4            | 407    | 15     |
| Total Analysis Volume [veh/h]               | 124          | 0      | 30     | 120          | 0      | 447    | 204          | 2085   | 42     | 16           | 1629   | 60     |
| Presence of On-Street Parking               | No           |        | No     | No           |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 44      | 0       | 0       | 44      | 0       | 11       | 36      | 0       | 10       | 35      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 33      | 0       | 0       | 0       | 0       | 0        | 14      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90   | 90   | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 14    | 14    | 14    | 7     | 62   | 62   | 2     | 57   | 57   |
| g / C, Green / Cycle                    | 0.15  | 0.15  | 0.15  | 0.08  | 0.69 | 0.69 | 0.02  | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.07  | 0.12  | 0.06  | 0.37 | 0.38 | 0.01  | 0.29 | 0.30 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 3500  | 3800 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 345   | 353   | 576   | 275   | 2629 | 1315 | 42    | 2419 | 1209 |
| d1, Uniform Delay [s]                   | 35.44 | 34.73 | 36.73 | 40.58 | 6.76 | 6.93 | 43.34 | 8.42 | 8.53 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.91  | 0.57  | 2.29  | 3.90  | 0.77 | 1.69 | 5.64  | 0.63 | 1.34 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.45   | 0.34   | 0.78   | 0.74   | 0.53   | 0.55   | 0.38  | 0.46   | 0.48   |
| d, Delay for Lane Group [s/veh]       | 36.35  | 35.29  | 39.02  | 44.48  | 7.53   | 8.63   | 48.98 | 9.05   | 9.87   |
| Lane Group LOS                        | D      | D      | D      | D      | A      | A      | D     | A      | A      |
| Critical Lane Group                   | No     | No     | Yes    | No     | No     | Yes    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.18   | 2.41   | 4.83   | 2.33   | 5.59   | 6.30   | 0.41  | 5.09   | 5.55   |
| 50th-Percentile Queue Length [ft/ln]  | 79.38  | 60.34  | 120.71 | 58.34  | 139.68 | 157.43 | 10.34 | 127.28 | 138.80 |
| 95th-Percentile Queue Length [veh/ln] | 5.72   | 4.34   | 8.43   | 4.20   | 9.46   | 10.41  | 0.74  | 8.79   | 9.42   |
| 95th-Percentile Queue Length [ft/ln]  | 142.88 | 108.60 | 210.80 | 105.00 | 236.59 | 260.32 | 18.61 | 219.79 | 235.41 |

**Movement, Approach, & Intersection Results**

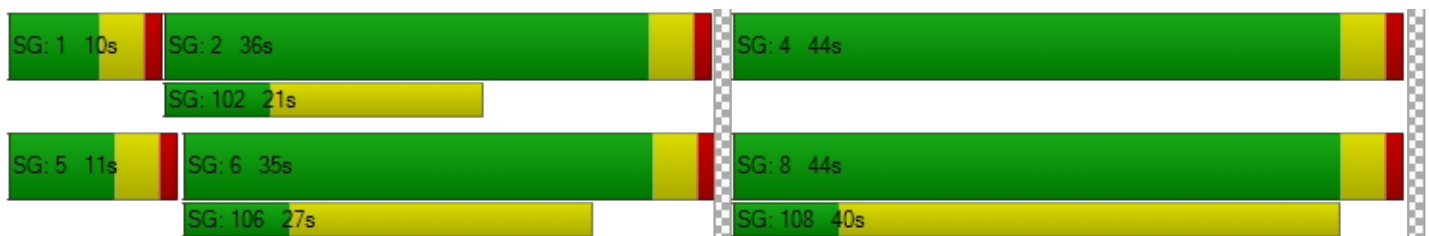
|                                 |       |       |       |       |       |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 36.35 | 36.35 | 36.35 | 35.29 | 35.29 | 39.02 | 44.48 | 7.89 | 8.63 | 48.98 | 9.31 | 9.87 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | A    | A    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 36.35 |       |       | 38.23 |       |       | 11.11 |      |      | 9.70  |      |      |
| Approach LOS                    | D     |       |       | D     |       |       | B     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 14.65 |       |       |       |       |       |       |      |      |       |      |      |
| Intersection LOS                | B     |       |       |       |       |       |       |      |      |       |      |      |
| Intersection V/C                | 0.589 |       |       |       |       |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 0.00  | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.818 | 2.461 | 0.000 | 3.313 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 889   | 889   | 711   | 689   |
| d_b, Bicycle Delay [s]                                   | 13.90 | 13.90 | 18.70 | 19.35 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.814 | 2.495 | 2.842 | 2.497 |
| Bicycle LOS  | A     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.634 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No          |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |             |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 147               | 59     | 22     | 88          | 112    | 144    | 47           | 1992   | 216    | 26           | 1439   | 46     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 147               | 59     | 22     | 88          | 112    | 144    | 47           | 1992   | 216    | 26           | 1439   | 46     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 37                | 15     | 6      | 22          | 28     | 36     | 12           | 498    | 54     | 7            | 360    | 12     |
| Total Analysis Volume [veh/h]               | 147               | 59     | 22     | 88          | 112    | 144    | 47           | 1992   | 216    | 26           | 1439   | 46     |
| Presence of On-Street Parking               | No                |        | No     | No          |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 19       | 27      | 0       | 22       | 30      | 0       | 10       | 31      | 0       | 10       | 31      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 16      | 0       | 0        | 19      | 0       | 0        | 20      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R    | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90   | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 9     | 13    | 13    | 6     | 9     | 9     | 4     | 53    | 53   | 3     | 51    | 51    |
| g / C, Green / Cycle                    | 0.10  | 0.14  | 0.14  | 0.06  | 0.10  | 0.10  | 0.05  | 0.59  | 0.59 | 0.03  | 0.57  | 0.57  |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.02  | 0.02  | 0.05  | 0.06  | 0.08  | 0.01  | 0.35  | 0.11 | 0.01  | 0.26  | 0.27  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1900  | 1900  | 3500  | 5700  | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 184   | 267   | 267   | 117   | 196   | 196   | 166   | 3326  | 1109 | 60    | 2164  | 1082  |
| d1, Uniform Delay [s]                   | 39.56 | 34.03 | 34.00 | 41.45 | 38.52 | 39.22 | 41.47 | 12.02 | 8.82 | 42.76 | 11.26 | 11.39 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 7.68  | 0.27  | 0.25  | 9.31  | 2.60  | 5.22  | 0.92  | 0.80  | 0.39 | 4.88  | 0.69  | 1.45  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |       |       |        |        |       |        |       |       |        |        |
|---------------------------------------|--------|-------|-------|-------|--------|--------|-------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.80   | 0.15  | 0.15  | 0.75  | 0.57   | 0.73   | 0.28  | 0.60   | 0.19  | 0.43  | 0.45   | 0.47   |
| d, Delay for Lane Group [s/veh]       | 47.25  | 34.30 | 34.26 | 50.76 | 41.12  | 44.45  | 42.39 | 12.82  | 9.21  | 47.64 | 11.94  | 12.85  |
| Lane Group LOS                        | D      | C     | C     | D     | D      | D      | D     | B      | A     | D     | B      | B      |
| Critical Lane Group                   | Yes    | No    | No    | No    | No     | Yes    | No    | Yes    | No    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.53   | 0.81  | 0.77  | 2.20  | 2.47   | 3.33   | 0.52  | 7.90   | 1.95  | 0.64  | 5.38   | 5.85   |
| 50th-Percentile Queue Length [ft/ln]  | 88.24  | 20.16 | 19.36 | 55.06 | 61.76  | 83.34  | 13.02 | 197.44 | 48.68 | 16.10 | 134.54 | 146.28 |
| 95th-Percentile Queue Length [veh/ln] | 6.35   | 1.45  | 1.39  | 3.96  | 4.45   | 6.00   | 0.94  | 12.51  | 3.51  | 1.16  | 9.19   | 9.82   |
| 95th-Percentile Queue Length [ft/ln]  | 158.84 | 36.29 | 34.84 | 99.10 | 111.17 | 150.01 | 23.43 | 312.67 | 87.63 | 28.97 | 229.65 | 245.45 |

**Movement, Approach, & Intersection Results**

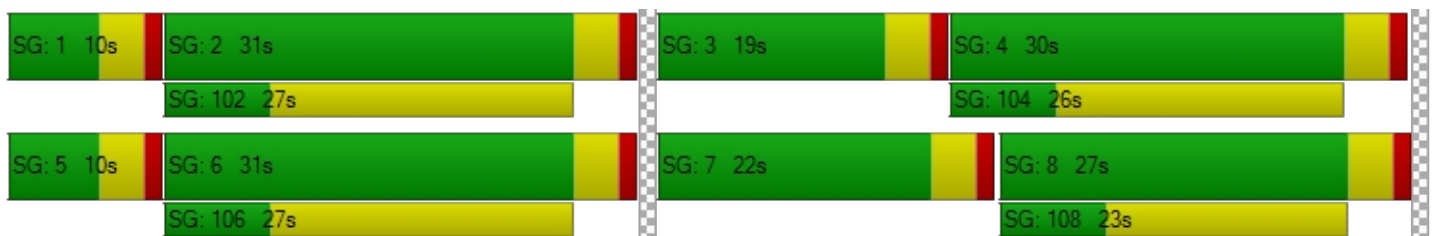
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 47.25 | 34.29 | 34.26 | 50.76 | 41.12 | 44.45 | 42.39 | 12.82 | 9.21 | 47.64 | 12.23 | 12.85 |
| Movement LOS                    | D     | C     | C     | D     | D     | D     | D     | B     | A    | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 42.64 |       |       | 44.98 |       |       | 13.09 |       |      | 12.86 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 17.09 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | B     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.634 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 34.72 |  |  | 34.72 |  |  | 34.72 |  |  | 34.72 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.413 |  |  | 2.396 |  |  | 3.280 |  |  | 3.097 |  |  |
| Crosswalk LOS  | B     |  |  | B     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 511   |  |  | 577   |  |  | 599   |  |  | 599   |  |  |
| d_b, Bicycle Delay [s]                                   | 24.98 |  |  | 22.80 |  |  | 22.09 |  |  | 22.09 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.748 |  |  | 1.843 |  |  | 2.800 |  |  | 2.391 |  |  |
| Bicycle LOS  | A     |  |  | A     |  |  | C     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 30.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.595 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No            |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |



**Volumes**

| Name  | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 542               | 327    | 238    | 5             | 116    | 126    | 199          | 1022   | 510    | 90           | 440    | 30     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 542               | 327    | 238    | 5             | 116    | 126    | 199          | 1022   | 510    | 90           | 440    | 30     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 136               | 82     | 60     | 1             | 29     | 32     | 50           | 256    | 128    | 23           | 110    | 8      |
| Total Analysis Volume [veh/h]               | 542               | 327    | 238    | 5             | 116    | 126    | 199          | 1022   | 510    | 90           | 440    | 30     |
| Presence of On-Street Parking               | No                |        | No     | No            |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 6        | 6       | 0       | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 30       | 30      | 0       | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 27       | 59      | 59      | 10       | 42      | 0       | 19       | 41      | 41      | 10       | 32      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0        | 7       | 0       | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 30      | 30      | 0        | 31      | 0       | 0        | 26      | 26      | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Maximum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 21    | 31    | 41    | 1     | 10    | 10    | 15    | 66    | 92   | 6     | 57    | 57    |
| g / C, Green / Cycle                    | 0.18  | 0.26  | 0.34  | 0.01  | 0.09  | 0.09  | 0.13  | 0.55  | 0.76 | 0.05  | 0.48  | 0.48  |
| (v / s)_i Volume / Saturation Flow Rate | 0.15  | 0.17  | 0.13  | 0.00  | 0.06  | 0.07  | 0.11  | 0.27  | 0.13 | 0.03  | 0.08  | 0.08  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 3800 | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 620   | 485   | 645   | 16    | 165   | 165   | 226   | 2097  | 2898 | 178   | 1814  | 907   |
| d1, Uniform Delay [s]                   | 48.08 | 40.20 | 29.94 | 59.16 | 53.32 | 53.62 | 51.62 | 16.49 | 3.91 | 55.52 | 17.86 | 17.91 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.04  | 1.64  | 0.35  | 11.41 | 5.38  | 7.16  | 10.67 | 0.81  | 0.13 | 2.23  | 0.20  | 0.42  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |        |        |        |        |       |       |        |        |
|---------------------------------------|--------|--------|--------|-------|--------|--------|--------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.87   | 0.67   | 0.37   | 0.32  | 0.70   | 0.76   | 0.88   | 0.49   | 0.18  | 0.51  | 0.17   | 0.18   |
| d, Delay for Lane Group [s/veh]       | 52.12  | 41.84  | 30.29  | 70.57 | 58.70  | 60.78  | 62.30  | 17.30  | 4.04  | 57.75 | 18.07  | 18.33  |
| Lane Group LOS                        | D      | D      | C      | E     | E      | E      | E      | B      | A     | E     | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No    | No     | Yes    | No     | Yes    | No    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 8.22   | 8.89   | 5.27   | 0.20  | 3.65   | 4.05   | 6.55   | 8.65   | 1.53  | 1.38  | 2.51   | 2.64   |
| 50th-Percentile Queue Length [ft/ln]  | 205.53 | 222.16 | 131.83 | 5.02  | 91.32  | 101.22 | 163.75 | 216.15 | 38.25 | 34.60 | 62.64  | 65.98  |
| 95th-Percentile Queue Length [veh/ln] | 12.92  | 13.78  | 9.04   | 0.36  | 6.57   | 7.29   | 10.75  | 13.47  | 2.75  | 2.49  | 4.51   | 4.75   |
| 95th-Percentile Queue Length [ft/ln]  | 323.09 | 344.38 | 225.98 | 9.03  | 164.37 | 182.19 | 268.67 | 336.70 | 68.86 | 62.29 | 112.75 | 118.77 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.12 | 41.84 | 30.29 | 70.57 | 58.70 | 60.78 | 62.30 | 17.30 | 4.04 | 57.75 | 18.15 | 18.33 |
| Movement LOS                    | D     | D     | C     | E     | E     | E     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 44.39 |       |       | 60.00 |       |       | 18.57 |       |      | 24.52 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | B     |       |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 30.13 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.595 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.763 | 2.341 | 3.085 | 2.862 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 916   | 633   | 617   | 467   |
| d_b, Bicycle Delay [s]                                   | 17.62 | 28.03 | 28.72 | 35.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.386 | 1.967 | 2.988 | 1.868 |
| Bicycle LOS  | C     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.6   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.453 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No               |        |        | No               |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 27               | 2      | 13     | 2                | 0      | 6      | 6            | 1444   | 22     | 6            | 732    | 3      |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 27               | 2      | 13     | 2                | 0      | 6      | 6            | 1444   | 22     | 6            | 732    | 3      |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 7                | 1      | 3      | 1                | 0      | 2      | 2            | 361    | 6      | 2            | 183    | 1      |
| Total Analysis Volume [veh/h]               | 27               | 2      | 13     | 2                | 0      | 6      | 6            | 1444   | 22     | 6            | 732    | 3      |
| Presence of On-Street Parking               | No               |        | No     | No               |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 6       | 0       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 30      | 0       | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 40      | 0       | 40      | 0       | 0       | 10       | 30      | 0       | 10       | 30      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 7       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 29      | 0       | 29      | 0       | 0       | 0        | 18      | 0       | 0        | 16      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         | No      |         |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 1     | 1     | 1     | 97   | 97   | 1     | 97   | 97   |
| g / C, Green / Cycle                    | 0.04  | 0.04  | 0.01  | 0.01  | 0.01  | 0.81 | 0.81 | 0.01  | 0.81 | 0.81 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02  | 0.01  | 0.00  | 0.00  | 0.00  | 0.39 | 0.39 | 0.00  | 0.13 | 0.13 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 69    | 72    | 22    | 23    | 17    | 1533 | 1533 | 17    | 3066 | 1533 |
| d1, Uniform Delay [s]                   | 56.37 | 55.97 | 58.63 | 58.75 | 59.07 | 3.65 | 3.64 | 59.07 | 2.56 | 2.58 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.63  | 1.40  | 1.77  | 5.77  | 11.67 | 1.07 | 1.07 | 11.67 | 0.11 | 0.23 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |       |       |       |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
| X, volume / capacity                  | 0.39  | 0.21  | 0.09  | 0.26  | 0.35  | 0.48   | 0.48   | 0.35  | 0.16  | 0.16  |
| d, Delay for Lane Group [s/veh]       | 60.01 | 57.37 | 60.40 | 64.52 | 70.74 | 4.72   | 4.71   | 70.74 | 2.67  | 2.81  |
| Lane Group LOS                        | E     | E     | E     | E     | E     | A      | A      | E     | A     | A     |
| Critical Lane Group                   | Yes   | No    | No    | Yes   | No    | Yes    | No     | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.87  | 0.47  | 0.07  | 0.22  | 0.24  | 4.69   | 4.66   | 0.24  | 1.02  | 1.13  |
| 50th-Percentile Queue Length [ft/ln]  | 21.73 | 11.74 | 1.77  | 5.45  | 5.93  | 117.16 | 116.40 | 5.93  | 25.55 | 28.22 |
| 95th-Percentile Queue Length [veh/ln] | 1.56  | 0.85  | 0.13  | 0.39  | 0.43  | 8.24   | 8.19   | 0.43  | 1.84  | 2.03  |
| 95th-Percentile Queue Length [ft/ln]  | 39.12 | 21.13 | 3.19  | 9.81  | 10.67 | 205.91 | 204.87 | 10.67 | 45.99 | 50.80 |



**Movement, Approach, & Intersection Results**

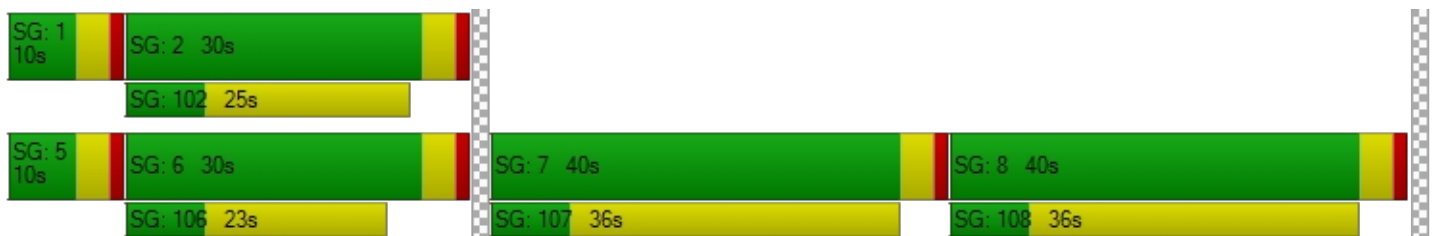
|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 60.01 | 57.37 | 57.37 | 60.40 | 0.00 | 64.52 | 70.74 | 4.72 | 4.71 | 70.74 | 2.72 | 2.81 |
| Movement LOS                    | E     | E     | E     | E     |      | E     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 59.06 |       |       | 63.49 |      |       | 4.99  |      |      | 3.27  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 5.63  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.453 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.977 | 1.960 | 2.830 | 2.824 |
| Crosswalk LOS  | A     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 600   | 600   | 433   | 433   |
| d_b, Bicycle Delay [s]                                   | 29.41 | 29.41 | 36.82 | 36.82 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.629 | 1.560 | 2.774 | 1.967 |
| Bicycle LOS  | A     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 31.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.637 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound          |        |        |
| Lane Configuration           |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 0      | 1            | 0      | 0      | 1                  | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00               |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No                 |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes                |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 351             | 154    | 828    | 26              | 118    | 36     | 31           | 909    | 507    | 171                | 349    | 9      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 351             | 154    | 828    | 26              | 118    | 36     | 31           | 909    | 507    | 171                | 349    | 9      |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 88              | 39     | 207    | 7               | 30     | 9      | 8            | 227    | 127    | 43                 | 87     | 2      |
| Total Analysis Volume [veh/h]               | 351             | 154    | 828    | 26              | 118    | 36     | 31           | 909    | 507    | 171                | 349    | 9      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Unsigna | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 29       | 60      | 0       | 12       | 43      | 0       | 11       | 37      | 0       | 11       | 37      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 31      | 0       | 0        | 32      | 0       | 0        | 25      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | C     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 25    | 29    | 4     | 7     | 7     | 4     | 65    | 65    | 7     | 68    | 68    |
| g / C, Green / Cycle                    | 0.21  | 0.24  | 0.03  | 0.06  | 0.06  | 0.03  | 0.54  | 0.54  | 0.06  | 0.57  | 0.57  |
| (v / s)_i Volume / Saturation Flow Rate | 0.20  | 0.04  | 0.01  | 0.04  | 0.04  | 0.02  | 0.24  | 0.27  | 0.05  | 0.06  | 0.06  |
| s, saturation flow rate [veh/h]         | 1800  | 3800  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 375   | 906   | 54    | 114   | 114   | 60    | 2049  | 1025  | 207   | 2148  | 1074  |
| d1, Uniform Delay [s]                   | 46.73 | 36.28 | 57.32 | 55.32 | 55.25 | 57.11 | 16.75 | 17.38 | 55.88 | 12.09 | 12.13 |
| k, delay calibration                    | 0.29  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 22.69 | 0.09  | 6.57  | 7.07  | 6.53  | 6.86  | 0.70  | 1.71  | 8.16  | 0.10  | 0.22  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |       |        |        |       |        |        |        |       |       |
|---------------------------------------|--------|-------|-------|--------|--------|-------|--------|--------|--------|-------|-------|
| X, volume / capacity                  | 0.94   | 0.17  | 0.48  | 0.69   | 0.67   | 0.52  | 0.44   | 0.49   | 0.83   | 0.11  | 0.11  |
| d, Delay for Lane Group [s/veh]       | 69.42  | 36.37 | 63.89 | 62.39  | 61.79  | 63.96 | 17.44  | 19.08  | 64.04  | 12.20 | 12.34 |
| Lane Group LOS                        | E      | D     | E     | E      | E      | E     | B      | B      | E      | B     | B     |
| Critical Lane Group                   | Yes    | No    | No    | Yes    | No     | No    | No     | Yes    | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 12.61  | 1.82  | 0.88  | 2.54   | 2.46   | 1.04  | 7.64   | 9.10   | 2.80   | 1.48  | 1.58  |
| 50th-Percentile Queue Length [ft/ln]  | 315.37 | 45.42 | 21.90 | 63.54  | 61.46  | 26.00 | 190.96 | 227.45 | 69.91  | 37.10 | 39.59 |
| 95th-Percentile Queue Length [veh/ln] | 18.44  | 3.27  | 1.58  | 4.57   | 4.43   | 1.87  | 12.17  | 14.04  | 5.03   | 2.67  | 2.85  |
| 95th-Percentile Queue Length [ft/ln]  | 460.99 | 81.76 | 39.41 | 114.37 | 110.63 | 46.80 | 304.28 | 351.12 | 125.83 | 66.78 | 71.26 |

**Movement, Approach, & Intersection Results**

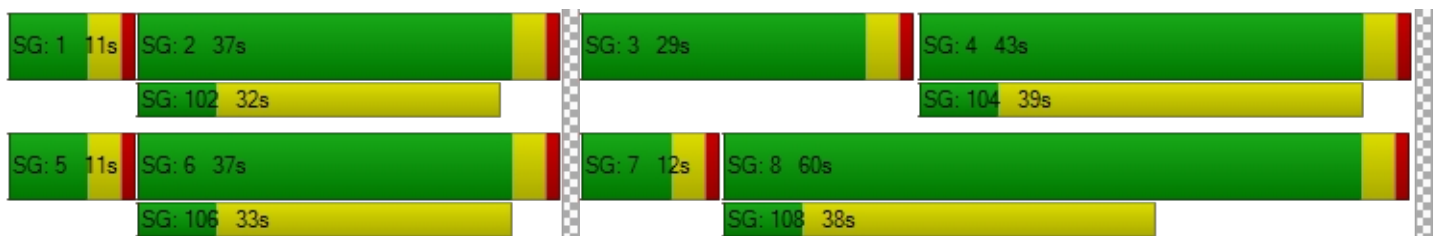
|                                 |       |       |      |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 69.42 | 36.37 | 0.00 | 63.89 | 62.19 | 61.79 | 63.96 | 17.44 | 19.08 | 64.04 | 12.25 | 12.34 |
| Movement LOS                    | E     | D     |      | E     | E     | E     | E     | B     | B     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 59.34 |       |      | 62.35 |       |       | 19.02 |       |       | 28.99 |       |       |
| Approach LOS                    | E     |       |      | E     |       |       | B     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 31.58 |       |      |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |      |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.637 |       |      |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.678 | 2.387 | 2.912 | 2.918 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 933   | 650   | 550   | 550   |
| d_b, Bicycle Delay [s]                                   | 17.08 | 27.35 | 31.55 | 31.55 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.976 | 1.708 | 2.355 | 1.851 |
| Bicycle LOS  | A     | A     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 3.4   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.531 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ⤵             |        |        | ↵                  |        |        | ↵                  |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Curb Present                 | No            |        |        | No            |        |        | No                 |        |        | No                 |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name  | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
|   |               |        |        |               |        |        |                    |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 11            | 0      | 2      | 0             | 0      | 16     | 1                  | 1780   | 2      | 1                  | 430    | 8      |
| Base Volume Adjustment Factor               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 11            | 0      | 2      | 0             | 0      | 16     | 1                  | 1780   | 2      | 1                  | 430    | 8      |
| Peak Hour Factor                            | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 3             | 0      | 1      | 0             | 0      | 4      | 0                  | 445    | 1      | 0                  | 108    | 2      |
| Total Analysis Volume [veh/h]               | 11            | 0      | 2      | 0             | 0      | 16     | 1                  | 1780   | 2      | 1                  | 430    | 8      |
| Presence of On-Street Parking               | No            |        | No     | No            |        | No     | No                 |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 0       | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 0       | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 0.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 35      | 0       | 0       | 0       | 35      | 10       | 75      | 0       | 10       | 75      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 24      | 0       | 0       | 0       | 0       | 0        | 17      | 0       | 0        | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         |         | No      |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 3     | 3     | 0     | 105  | 105  | 0     | 105  | 105  |
| g / C, Green / Cycle                    | 0.02  | 0.02  | 0.00  | 0.88 | 0.88 | 0.00  | 0.88 | 0.88 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.01  | 0.00  | 0.47 | 0.47 | 0.00  | 0.11 | 0.00 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900 | 1900 | 1900  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 93    | 40    | 4     | 1666 | 1666 | 4     | 3332 | 1666 |
| d1, Uniform Delay [s]                   | 57.90 | 57.97 | 59.76 | 1.72 | 1.72 | 59.76 | 1.03 | 0.91 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.67  | 6.31  | 32.89 | 1.24 | 1.24 | 29.31 | 0.08 | 0.01 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |        |        |       |       |      |
|---------------------------------------|-------|-------|-------|--------|--------|-------|-------|------|
| X, volume / capacity                  | 0.14  | 0.40  | 0.26  | 0.53   | 0.53   | 0.25  | 0.13  | 0.00 |
| d, Delay for Lane Group [s/veh]       | 58.57 | 64.28 | 92.65 | 2.95   | 2.95   | 89.07 | 1.11  | 0.92 |
| Lane Group LOS                        | E     | E     | F     | A      | A      | F     | A     | A    |
| Critical Lane Group                   | No    | Yes   | No    | Yes    | No     | Yes   | No    | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.41  | 0.55  | 0.07  | 2.60   | 2.60   | 0.06  | 0.33  | 0.01 |
| 50th-Percentile Queue Length [ft/ln]  | 10.17 | 13.76 | 1.63  | 64.95  | 64.93  | 1.58  | 8.24  | 0.30 |
| 95th-Percentile Queue Length [veh/ln] | 0.73  | 0.99  | 0.12  | 4.68   | 4.67   | 0.11  | 0.59  | 0.02 |
| 95th-Percentile Queue Length [ft/ln]  | 18.31 | 24.76 | 2.94  | 116.90 | 116.87 | 2.84  | 14.84 | 0.55 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 58.57 | 58.57 | 58.57 | 0.00  | 0.00 | 64.28 | 92.65 | 2.95 | 2.95 | 89.07 | 1.11 | 0.92 |
| Movement LOS                    | E     | E     | E     |       |      | E     | F     | A    | A    | F     | A    | A    |
| d_A, Approach Delay [s/veh]     | 58.57 |       |       | 64.28 |      |       | 3.00  |      |      | 1.30  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 3.43  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.531 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.50 | 49.50 | 0.00  | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.736 | 1.741 | 0.000 | 2.828 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 517   | 517   | 1184  | 1184  |
| d_b, Bicycle Delay [s]                                   | 33.00 | 33.00 | 10.00 | 10.00 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.581 | 1.560 | 3.031 | 1.922 |
| Bicycle LOS  | A     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 35.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.849 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | [Symbol]                |        |        | [Symbol]                |        |        | [Symbol]     |        |        | [Symbol]     |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 157                     | 456    | 174    | 374                     | 415    | 346    | 305          | 848    | 173    | 161          | 1083   | 713    |
| Base Volume Input [veh/h]                   | 157                     | 456    | 174    | 374                     | 415    | 346    | 305          | 848    | 173    | 161          | 1083   | 713    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 157                     | 456    | 174    | 374                     | 415    | 346    | 305          | 848    | 173    | 161          | 1083   | 713    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 39                      | 114    | 44     | 94                      | 104    | 87     | 76           | 212    | 43     | 40           | 271    | 178    |
| Total Analysis Volume [veh/h]               | 157                     | 456    | 174    | 374                     | 415    | 346    | 305          | 848    | 173    | 161          | 1083   | 713    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 19       | 48      | 0       | 15       | 41      | 0       | 11       | 37      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 30      | 0       | 0        | 28      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 19    | 19    | 14    | 27    | 27    | 11    | 54    | 54    | 7     | 50    | 50    |
| g / C, Green / Cycle                    | 0.05  | 0.18  | 0.18  | 0.13  | 0.25  | 0.25  | 0.10  | 0.49  | 0.49  | 0.06  | 0.45  | 0.45  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.12  | 0.09  | 0.11  | 0.22  | 0.18  | 0.09  | 0.22  | 0.09  | 0.05  | 0.29  | 0.38  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 194   | 670   | 335   | 439   | 468   | 468   | 352   | 1859  | 930   | 223   | 1719  | 860   |
| d1, Uniform Delay [s]                   | 51.43 | 42.44 | 41.11 | 47.16 | 40.01 | 38.24 | 48.78 | 18.48 | 15.79 | 50.59 | 23.08 | 26.42 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 7.86  | 1.23  | 1.25  | 4.79  | 5.84  | 2.31  | 6.47  | 0.81  | 0.44  | 4.38  | 1.76  | 9.10  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.81   | 0.68   | 0.52   | 0.85   | 0.89   | 0.74   | 0.87   | 0.46   | 0.19   | 0.72   | 0.63   | 0.83   |
| d, Delay for Lane Group [s/veh]       | 59.29  | 43.67  | 42.36  | 51.94  | 45.85  | 40.55  | 55.25  | 19.29  | 16.24  | 54.96  | 24.85  | 35.52  |
| Lane Group LOS                        | E      | D      | D      | D      | D      | D      | E      | B      | B      | D      | C      | D      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | Yes    | No     | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 2.35   | 5.89   | 4.39   | 5.29   | 5.73   | 8.83   | 4.43   | 7.14   | 2.53   | 2.31   | 10.89  | 17.95  |
| 50th-Percentile Queue Length [ft/ln]  | 58.72  | 147.33 | 109.71 | 132.20 | 143.32 | 220.76 | 110.73 | 178.48 | 63.27  | 57.71  | 272.33 | 448.86 |
| 95th-Percentile Queue Length [veh/ln] | 4.23   | 9.87   | 7.82   | 9.06   | 9.66   | 13.70  | 7.88   | 11.52  | 4.56   | 4.15   | 16.31  | 24.90  |
| 95th-Percentile Queue Length [ft/ln]  | 105.70 | 246.86 | 195.60 | 226.48 | 241.49 | 342.60 | 197.01 | 288.03 | 113.89 | 103.87 | 407.65 | 622.59 |

**Movement, Approach, & Intersection Results**

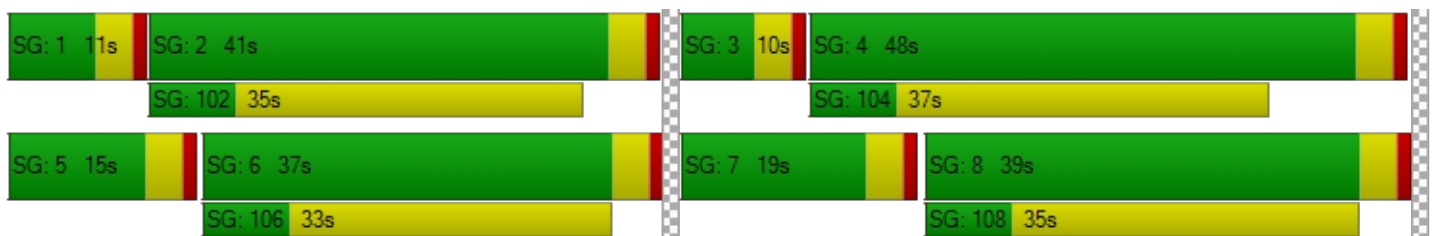
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 59.29 | 43.67 | 42.36 | 51.94 | 45.85 | 40.55 | 55.25 | 19.29 | 16.24 | 54.96 | 24.85 | 35.52 |
| Movement LOS                    | E     | D     | D     | D     | D     | D     | E     | B     | B     | D     | C     | D     |
| d_A, Approach Delay [s/veh]     | 46.50 |       |       | 46.24 |       |       | 27.16 |       |       | 31.21 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 35.77 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.849 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.58 | 44.58 | 44.58 | 44.58 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.817 | 2.967 | 3.009 | 3.071 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 636   | 800   | 672   | 600   |
| d_b, Bicycle Delay [s]                                   | 25.59 | 19.82 | 24.25 | 26.97 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.209 | 2.496 | 2.654 | 3.174 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**

**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 27.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.720 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐           |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 532               | 35     | 379    | 11                | 22     | 10     | 16           | 987    | 332    | 313          | 1399   | 18     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 532               | 35     | 379    | 11                | 22     | 10     | 16           | 987    | 332    | 313          | 1399   | 18     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 133               | 9      | 95     | 3                 | 6      | 3      | 4            | 247    | 83     | 78           | 350    | 5      |
| Total Analysis Volume [veh/h]               | 532               | 35     | 379    | 11                | 22     | 10     | 16           | 987    | 332    | 313          | 1399   | 18     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 28       | 65      | 65      | 0       | 37      | 0       | 10       | 38      | 0       | 17       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 26      | 0       | 26      | 0       | 0        | 27      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 21    | 29    | 46    | 5     | 5     | 3     | 66    | 66    | 13    | 76    | 76    |
| g / C, Green / Cycle                    | 0.17  | 0.24  | 0.38  | 0.04  | 0.04  | 0.02  | 0.55  | 0.55  | 0.11  | 0.64  | 0.64  |
| (v / s)_i Volume / Saturation Flow Rate | 0.15  | 0.02  | 0.20  | 0.01  | 0.02  | 0.01  | 0.36  | 0.33  | 0.09  | 0.37  | 0.37  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  |
| c, Capacity [veh/h]                     | 600   | 462   | 732   | 77    | 73    | 38    | 1041  | 1041  | 380   | 1208  | 1208  |
| d1, Uniform Delay [s]                   | 48.58 | 35.01 | 28.34 | 55.82 | 56.43 | 58.02 | 19.16 | 18.39 | 52.37 | 12.72 | 12.70 |
| k, delay calibration                    | 0.11  | 0.11  | 0.30  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.64  | 0.07  | 1.59  | 0.84  | 4.07  | 7.21  | 3.25  | 2.65  | 4.52  | 2.10  | 2.09  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.89   | 0.08  | 0.52   | 0.14  | 0.44  | 0.42  | 0.66   | 0.61   | 0.82   | 0.59   | 0.59   |
| d, Delay for Lane Group [s/veh]       | 53.22  | 35.08 | 29.92  | 56.66 | 60.50 | 65.23 | 22.41  | 21.05  | 56.90  | 14.81  | 14.79  |
| Lane Group LOS                        | D      | D     | C      | E     | E     | E     | C      | C      | E      | B      | B      |
| Critical Lane Group                   | No     | No    | Yes    | No    | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 8.15   | 0.81  | 8.67   | 0.34  | 1.03  | 0.56  | 13.96  | 12.35  | 4.85   | 11.17  | 11.13  |
| 50th-Percentile Queue Length [ft/ln]  | 203.68 | 20.15 | 216.69 | 8.52  | 25.81 | 13.92 | 349.10 | 308.75 | 121.28 | 279.13 | 278.32 |
| 95th-Percentile Queue Length [veh/ln] | 12.83  | 1.45  | 13.50  | 0.61  | 1.86  | 1.00  | 20.09  | 18.11  | 8.46   | 16.65  | 16.60  |
| 95th-Percentile Queue Length [ft/ln]  | 320.71 | 36.26 | 337.39 | 15.34 | 46.45 | 25.05 | 502.31 | 452.83 | 211.59 | 416.13 | 415.12 |

**Movement, Approach, & Intersection Results**

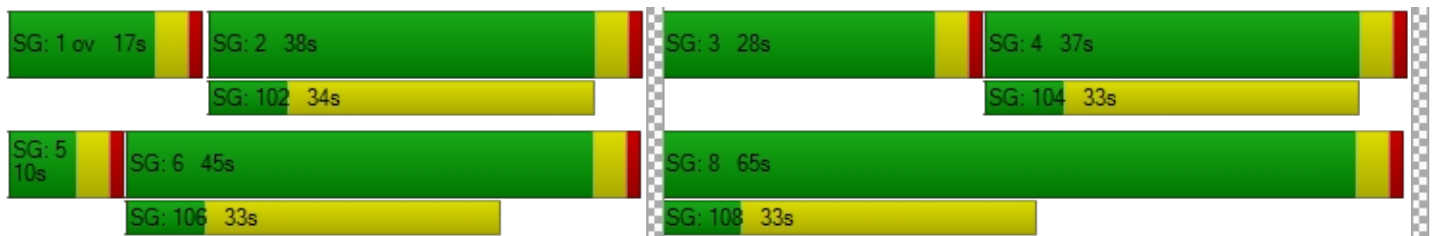
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 53.22 | 35.08 | 29.92 | 56.66 | 60.50 | 60.50 | 65.23 | 21.99 | 21.05 | 56.90 | 14.80 | 14.79 |
| Movement LOS                    | D     | D     | C     | E     | E     | E     | E     | C     | C     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 43.22 |       |       | 59.52 |       |       | 22.27 |       |       | 22.42 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 27.62 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.720 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.729 | 1.990 | 2.952 | 2.987 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1017  | 550   | 567   | 683   |
| d_b, Bicycle Delay [s]                                   | 14.51 | 31.54 | 30.82 | 26.01 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.121 | 1.631 | 2.661 | 2.987 |
| Bicycle LOS  | C     | A     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.799 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 14                | 2      | 11     | 113               | 3      | 319    | 306          | 1023   | 13     | 6            | 1435   | 149    |
| Base Volume Input [veh/h]                   | 14                | 2      | 11     | 113               | 3      | 319    | 306          | 1023   | 13     | 6            | 1435   | 149    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 14                | 2      | 11     | 113               | 3      | 319    | 306          | 1023   | 13     | 6            | 1435   | 149    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 4                 | 1      | 3      | 28                | 1      | 80     | 77           | 256    | 3      | 2            | 359    | 37     |
| Total Analysis Volume [veh/h]               | 14                | 2      | 11     | 113               | 3      | 319    | 306          | 1023   | 13     | 6            | 1435   | 149    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 39       | 61      | 0       | 10       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C    | C    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115  | 115  | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4     | 4     | 4     | 16    | 16    | 50    | 22    | 78   | 78   | 1     | 57    | 57    |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.03  | 0.14  | 0.14  | 0.44  | 0.20  | 0.68 | 0.68 | 0.01  | 0.49  | 0.49  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.00  | 0.01  | 0.03  | 0.03  | 0.17  | 0.17  | 0.27 | 0.27 | 0.00  | 0.38  | 0.08  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 92    | 59    | 59    | 252   | 252   | 829   | 352   | 1292 | 1292 | 18    | 1879  | 939   |
| d1, Uniform Delay [s]                   | 54.44 | 54.07 | 54.33 | 44.00 | 44.00 | 21.99 | 44.85 | 8.11 | 8.10 | 56.57 | 23.63 | 15.96 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.19  | 0.13  | 0.50 | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.75  | 0.23  | 1.50  | 0.46  | 0.46  | 0.51  | 7.81  | 0.93 | 0.93 | 10.15 | 3.01  | 0.36  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |        |        |       |        |        |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.15  | 0.03  | 0.19  | 0.23  | 0.23  | 0.39   | 0.87   | 0.40   | 0.40   | 0.33  | 0.76   | 0.16   |
| d, Delay for Lane Group [s/veh]       | 55.19 | 54.30 | 55.83 | 44.46 | 44.46 | 22.51  | 52.66  | 9.04   | 9.02   | 66.72 | 26.65  | 16.32  |
| Lane Group LOS                        | E     | D     | E     | D     | D     | C      | D      | A      | A      | E     | C      | B      |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | Yes    | Yes    | No     | No     | No    | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 0.42  | 0.06  | 0.34  | 1.50  | 1.51  | 5.93   | 9.18   | 5.56   | 5.53   | 0.22  | 16.07  | 2.24   |
| 50th-Percentile Queue Length [ft/ln]  | 10.39 | 1.50  | 8.39  | 37.61 | 37.71 | 148.16 | 229.49 | 139.06 | 138.33 | 5.61  | 401.81 | 55.95  |
| 95th-Percentile Queue Length [veh/ln] | 0.75  | 0.11  | 0.60  | 2.71  | 2.72  | 9.92   | 14.15  | 9.43   | 9.39   | 0.40  | 22.65  | 4.03   |
| 95th-Percentile Queue Length [ft/ln]  | 18.70 | 2.70  | 15.09 | 67.70 | 67.88 | 247.97 | 353.72 | 235.75 | 234.77 | 10.10 | 566.19 | 100.71 |

**Movement, Approach, & Intersection Results**

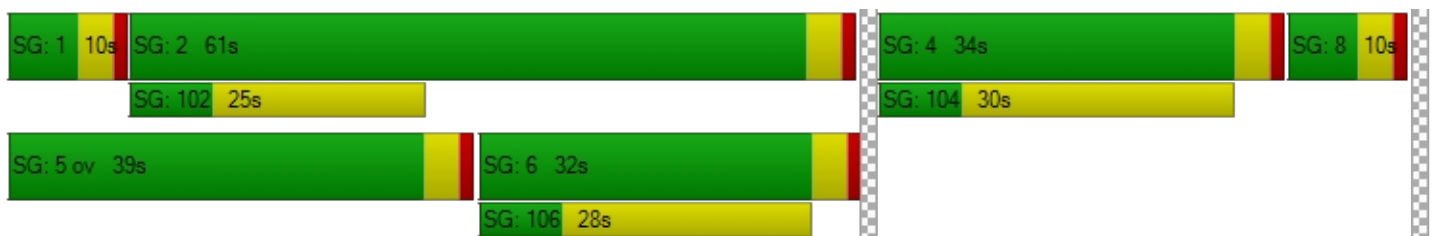
|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 55.19 | 54.30 | 55.83 | 44.46 | 44.46 | 22.51 | 52.66 | 9.03 | 9.02 | 66.72 | 26.65 | 16.32 |
| Movement LOS                    | E     | D     | E     | D     | D     | C     | D     | A    | A    | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 55.38 |       |       | 28.36 |       |       | 18.98 |      |      | 25.83 |       |       |
| Approach LOS                    | E     |       |       | C     |       |       | B     |      |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 23.68 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.799 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.155 | 2.360 | 2.938 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 104   | 522   | 991   | 487   |
| d_b, Bicycle Delay [s]                                   | 51.68 | 31.43 | 14.64 | 32.93 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.604 | 2.277 | 2.667 | 2.871 |
| Bicycle LOS  | A     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 44.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.712 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 642               | 801    | 134    | 233               | 406    | 122    | 240          | 807    | 317    | 84           | 784    | 229    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 642               | 801    | 134    | 233               | 406    | 122    | 240          | 807    | 317    | 84           | 784    | 229    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 161               | 200    | 34     | 58                | 102    | 31     | 60           | 202    | 79     | 21           | 196    | 57     |
| Total Analysis Volume [veh/h]               | 642               | 801    | 134    | 233               | 406    | 122    | 240          | 807    | 317    | 84           | 784    | 229    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 25       | 48      | 0       | 14       | 37      | 0       | 19       | 45      | 0       | 13       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 0       | 0        | 26      | 0       | 0        | 28      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 21    | 25    | 25    | 10    | 14    | 14    | 15    | 62    | 62    | 7     | 54    | 54    |
| g / C, Green / Cycle                    | 0.18  | 0.21  | 0.21  | 0.08  | 0.12  | 0.12  | 0.13  | 0.51  | 0.51  | 0.06  | 0.45  | 0.45  |
| (v / s)_i Volume / Saturation Flow Rate | 0.18  | 0.17  | 0.16  | 0.07  | 0.09  | 0.09  | 0.13  | 0.21  | 0.17  | 0.05  | 0.21  | 0.12  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 1800  | 3800  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 613   | 800   | 400   | 290   | 449   | 225   | 226   | 1952  | 976   | 108   | 1702  | 851   |
| d1, Uniform Delay [s]                   | 49.51 | 44.82 | 44.60 | 54.11 | 51.52 | 51.30 | 52.50 | 18.03 | 17.04 | 55.67 | 23.05 | 20.80 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 30.82 | 1.74  | 3.09  | 5.22  | 3.25  | 5.27  | 46.24 | 0.65  | 0.88  | 11.56 | 0.90  | 0.78  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 1.05   | 0.79   | 0.77   | 0.80   | 0.80   | 0.76   | 1.06   | 0.41   | 0.32   | 0.78   | 0.46   | 0.27   |
| d, Delay for Lane Group [s/veh]       | 80.34  | 46.56  | 47.69  | 59.33  | 54.77  | 56.56  | 98.74  | 18.68  | 17.93  | 67.24  | 23.95  | 21.58  |
| Lane Group LOS                        | F      | D      | D      | E      | D      | E      | F      | B      | B      | E      | C      | C      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | Yes    | No     | No     | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 11.78  | 9.02   | 8.91   | 3.67   | 5.43   | 5.31   | 9.68   | 7.00   | 5.30   | 2.85   | 7.87   | 4.22   |
| 50th-Percentile Queue Length [ft/ln]  | 294.43 | 225.42 | 222.76 | 91.71  | 135.73 | 132.77 | 242.11 | 174.88 | 132.62 | 71.36  | 196.78 | 105.53 |
| 95th-Percentile Queue Length [veh/ln] | 17.81  | 13.94  | 13.81  | 6.60   | 9.25   | 9.09   | 15.18  | 11.33  | 9.08   | 5.14   | 12.47  | 7.59   |
| 95th-Percentile Queue Length [ft/ln]  | 445.16 | 348.54 | 345.15 | 165.07 | 231.26 | 227.25 | 379.46 | 283.32 | 227.05 | 128.46 | 311.81 | 189.77 |

**Movement, Approach, & Intersection Results**

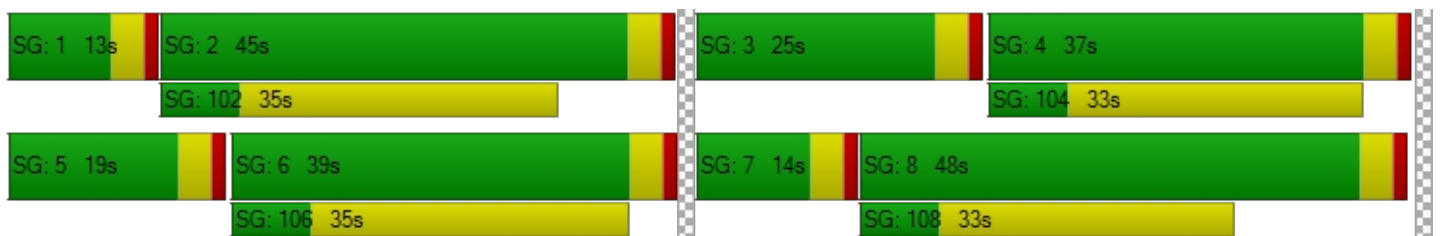
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 80.34 | 46.81 | 47.69 | 59.33 | 54.99 | 56.56 | 98.74 | 18.68 | 17.93 | 67.24 | 23.95 | 21.58 |
| Movement LOS                    | F     | D     | D     | E     | D     | E     | F     | B     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 60.53 |       |       | 56.57 |       |       | 32.59 |       |       | 26.77 |       |       |
| Approach LOS                    | E     |       |       | E     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 44.24 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.712 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 3.030 | 2.987 | 2.940 | 2.836 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 733   | 550   | 683   | 583   |
| d_b, Bicycle Delay [s]                                   | 24.08 | 31.55 | 26.02 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.427 | 1.978 | 2.685 | 2.465 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 64.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | E     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.051 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | ↵↵↵             |        |        | ↵↵↵             |        |        | ↵↵↵↵         |        |        | ↵↵↵        |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |



**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 212             | 618    | 16     | 474             | 257    | 46     | 196          | 686    | 148    | 13         | 524    | 806    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 212             | 618    | 16     | 474             | 257    | 46     | 196          | 686    | 148    | 13         | 524    | 806    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 53              | 155    | 4      | 119             | 64     | 12     | 49           | 172    | 37     | 3          | 131    | 202    |
| Total Analysis Volume [veh/h]               | 212             | 618    | 16     | 474             | 257    | 46     | 196          | 686    | 148    | 13         | 524    | 806    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 35       | 38      | 0       | 33       | 36      | 0       | 10       | 39      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 16    | 23    | 23    | 29    | 36    | 36    | 6     | 50    | 50    | 2     | 46    | 46    |
| g / C, Green / Cycle                    | 0.14  | 0.19  | 0.19  | 0.24  | 0.30  | 0.30  | 0.05  | 0.42  | 0.42  | 0.02  | 0.38  | 0.38  |
| (v / s)_i Volume / Saturation Flow Rate | 0.12  | 0.17  | 0.17  | 0.26  | 0.08  | 0.08  | 0.06  | 0.23  | 0.21  | 0.01  | 0.14  | 0.42  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 244   | 362   | 362   | 435   | 563   | 563   | 178   | 790   | 790   | 33    | 1458  | 729   |
| d1, Uniform Delay [s]                   | 50.83 | 47.24 | 47.16 | 45.53 | 32.36 | 32.21 | 56.98 | 26.46 | 26.00 | 58.25 | 26.44 | 36.99 |
| k, delay calibration                    | 0.11  | 0.15  | 0.15  | 0.49  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.06  | 9.48  | 8.79  | 69.29 | 0.26  | 0.24  | 63.60 | 2.68  | 2.36  | 7.25  | 0.69  | 66.02 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |       |        |         |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|---------|
| X, volume / capacity                  | 0.87   | 0.88   | 0.87   | 1.09   | 0.28   | 0.26   | 1.10   | 0.54   | 0.51   | 0.39  | 0.36   | 1.11    |
| d, Delay for Lane Group [s/veh]       | 59.89  | 56.73  | 55.95  | 114.82 | 32.62  | 32.46  | 120.58 | 29.15  | 28.36  | 65.50 | 27.13  | 103.02  |
| Lane Group LOS                        | E      | E      | E      | F      | C      | C      | F      | C      | C      | E     | C      | F       |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | No     | No     | Yes    | No     | No     | No    | No     | Yes     |
| 50th-Percentile Queue Length [veh/ln] | 6.85   | 10.17  | 10.01  | 21.21  | 3.52   | 3.33   | 4.26   | 9.80   | 9.02   | 0.46  | 5.50   | 34.25   |
| 50th-Percentile Queue Length [ft/ln]  | 171.20 | 254.37 | 250.21 | 530.32 | 88.06  | 83.26  | 106.55 | 244.96 | 225.47 | 11.45 | 137.57 | 856.34  |
| 95th-Percentile Queue Length [veh/ln] | 11.14  | 15.41  | 15.20  | 30.24  | 6.34   | 5.99   | 7.67   | 14.93  | 13.94  | 0.82  | 9.35   | 47.06   |
| 95th-Percentile Queue Length [ft/ln]  | 278.49 | 385.15 | 379.92 | 756.12 | 158.50 | 149.86 | 191.78 | 373.30 | 348.60 | 20.62 | 233.75 | 1176.49 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |        |       |       |        |       |       |       |       |        |
|---------------------------------|-------|-------|-------|--------|-------|-------|--------|-------|-------|-------|-------|--------|
| d_M, Delay for Movement [s/veh] | 59.89 | 56.35 | 55.95 | 114.82 | 32.56 | 32.46 | 120.58 | 28.85 | 28.36 | 65.50 | 27.13 | 103.02 |
| Movement LOS                    | E     | E     | E     | F      | C     | C     | F      | C     | C     | E     | C     | F      |
| d_A, Approach Delay [s/veh]     | 57.23 |       |       | 82.73  |       |       | 46.24  |       |       | 73.05 |       |        |
| Approach LOS                    | E     |       |       | F      |       |       | D      |       |       | E     |       |        |
| d_I, Intersection Delay [s/veh] | 64.67 |       |       |        |       |       |        |       |       |       |       |        |
| Intersection LOS                | E     |       |       |        |       |       |        |       |       |       |       |        |
| Intersection V/C                | 1.051 |       |       |        |       |       |        |       |       |       |       |        |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.560 | 2.781 | 2.761 | 2.876 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 567   | 533   | 583   | 583   |
| d_b, Bicycle Delay [s]                                   | 30.83 | 32.28 | 30.12 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.258 | 2.201 | 2.409 | 2.668 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.713 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           | ↵↑         |        | ↑↘         |        | ↵              |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Curb Present                 | No         |        | No         |        | No             |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |

**Volumes**

| Name  | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
|   |            |        |            |        |                |        |
| Base Volume Input [veh/h]                   | 30         | 1174   | 1233       | 17     | 8              | 21     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0              | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]                 | 30         | 1174   | 1233       | 17     | 8              | 21     |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 8          | 294    | 308        | 4      | 2              | 5      |
| Total Analysis Volume [veh/h]               | 30         | 1174   | 1233       | 17     | 8              | 21     |
| Presence of On-Street Parking               | No         | No     | No         | No     | No             | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0          | 0      | 0              | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        | 0          |        | 0              |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        | 0          |        | 0              |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]                 | 0          |        | 0          |        | 0              |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|------------|------------|------------|------------|------------|------------|
| Signal Group                 | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |            |            |            |            |            |            |
| Lead / Lag                   | -          | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 0          | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 0          | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 0.0        | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 0          | 94         | 94         | 0          | 26         | 0          |
| Vehicle Extension [s]        | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0          | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0          | 0          | 14         | 0          | 15         | 0          |
| Delayed Vehicle Green [s]    | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |            | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               |            | No         | No         |            | No         |            |
| Maximum Recall               |            | No         | No         |            | No         |            |
| Pedestrian Recall            |            | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | R    | C     |
|---|------|------|------|------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           | 108  | 108  | 108  | 108  | 4     |
| g / C, Green / Cycle                    | 0.90 | 0.90 | 0.90 | 0.90 | 0.03  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.62 | 0.65 | 0.01 | 0.02  |
| s, saturation flow rate [veh/h]         | 1800 | 1900 | 1900 | 1900 | 1800  |
| c, Capacity [veh/h]                     | 1308 | 1714 | 1714 | 1714 | 56    |
| d1, Uniform Delay [s]                   | 0.59 | 1.51 | 1.64 | 0.58 | 57.18 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| d2, Incremental Delay [s]               | 0.03 | 2.25 | 2.64 | 0.01 | 7.09  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |

**Lane Group Results**

|                                       |      |        |        |      |       |
|---------------------------------------|------|--------|--------|------|-------|
| X, volume / capacity                  | 0.02 | 0.69   | 0.72   | 0.01 | 0.51  |
| d, Delay for Lane Group [s/veh]       | 0.62 | 3.76   | 4.28   | 0.59 | 64.26 |
| Lane Group LOS                        | A    | A      | A      | A    | E     |
| Critical Lane Group                   | No   | No     | Yes    | No   | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.02 | 2.22   | 2.58   | 0.01 | 0.98  |
| 50th-Percentile Queue Length [ft/ln]  | 0.58 | 55.61  | 64.38  | 0.29 | 24.44 |
| 95th-Percentile Queue Length [veh/ln] | 0.04 | 4.00   | 4.64   | 0.02 | 1.76  |
| 95th-Percentile Queue Length [ft/ln]  | 1.04 | 100.10 | 115.88 | 0.52 | 43.98 |



**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 0.62  | 3.76 | 4.28 | 0.59 | 64.26 | 64.26 |
| Movement LOS                    | A     | A    | A    | A    | E     | E     |
| d_A, Approach Delay [s/veh]     | 3.68  |      | 4.23 |      | 64.26 |       |
| Approach LOS                    | A     |      | A    |      | E     |       |
| d_I, Intersection Delay [s/veh] | 4.66  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.713 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.48 | 0.00  | 49.48 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.753 | 0.000 | 1.808 |
| Crosswalk LOS  | C     | F     | A     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1501  | 1501  | 367   |
| d_b, Bicycle Delay [s]                                   | 3.74  | 3.74  | 39.99 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.546 | 3.622 | 1.607 |
| Bicycle LOS  | D     | D     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.776 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐              |        |        | ⇐                |        |        | ⇐         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Curb Present                 |                |        |        | No               |        |        | No               |        |        | No        |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name  |        |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |        |        |        |                |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 0      | 0      | 0      | 730            | 0      | 605    | 0                | 1898   | 1100   | 0                | 2623   | 451    |
| Base Volume Adjustment Factor               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00   | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0      | 0      | 0      | 730            | 0      | 605    | 0                | 1898   | 1100   | 0                | 2623   | 451    |
| Peak Hour Factor                            | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0      | 0      | 0      | 183            | 0      | 151    | 0                | 475    | 275    | 0                | 656    | 113    |
| Total Analysis Volume [veh/h]               | 0      | 0      | 0      | 730            | 0      | 605    | 0                | 1898   | 1100   | 0                | 2623   | 451    |
| Presence of On-Street Parking               |        |        |        | No             |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 64    | 0       | 0     | 0       | 26      | 0       | 0       | 26      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 15      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | C     | C     |
|---|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 27    | 27    | 27    | 55    | 55    |
| g / C, Green / Cycle                    | 0.30  | 0.30  | 0.30  | 0.61  | 0.61  |
| (v / s)_i Volume / Saturation Flow Rate | 0.25  | 0.25  | 0.23  | 0.33  | 0.46  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 5700  | 5700  |
| c, Capacity [veh/h]                     | 534   | 534   | 564   | 3501  | 3501  |
| d1, Uniform Delay [s]                   | 29.51 | 29.51 | 29.01 | 10.02 | 12.38 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 3.48  | 3.48  | 2.52  | 0.61  | 1.52  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.83   | 0.83   | 0.79   | 0.54   | 0.75   |
| d, Delay for Lane Group [s/veh]       | 32.99  | 32.99  | 31.53  | 10.63  | 13.89  |
| Lane Group LOS                        | C      | C      | C      | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 9.19   | 9.19   | 8.92   | 6.61   | 11.44  |
| 50th-Percentile Queue Length [ft/ln]  | 229.66 | 229.66 | 222.94 | 165.28 | 286.12 |
| 95th-Percentile Queue Length [veh/ln] | 14.16  | 14.16  | 13.82  | 10.83  | 16.99  |
| 95th-Percentile Queue Length [ft/ln]  | 353.93 | 353.93 | 345.38 | 270.70 | 424.82 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |       |       |      |       |       |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 32.99 | 0.00 | 31.92 | 0.00  | 10.63 | 0.00 | 0.00  | 13.89 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | B     |      |       | B     |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 32.51 |      |       | 10.63 |       |      | 13.89 |       |      |
| Approach LOS                    | A     |      |      | C     |      |       | B     |       |      | B     |       |      |
| d_I, Intersection Delay [s/veh] | 17.08 |      |      |       |      |       |       |       |      |       |       |      |
| Intersection LOS                | B     |      |      |       |      |       |       |       |      |       |       |      |
| Intersection V/C                | 0.776 |      |      |       |      |       |       |       |      |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 0.000 | 2.456 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                   | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 3.762 | 2.604 | 3.002 |
| Bicycle LOS  | D     | D     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 37.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.850 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No             |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]                   | 1110           | 72     | 482    | 0               | 0      | 217    | 205              | 2041   | 410    | 0                | 2686   | 43     |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 1110           | 72     | 482    | 0               | 0      | 217    | 205              | 2041   | 410    | 0                | 2686   | 43     |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 278            | 18     | 121    | 0               | 0      | 54     | 51               | 510    | 103    | 0                | 672    | 11     |
| Total Analysis Volume [veh/h]               | 1110           | 72     | 482    | 0               | 0      | 217    | 205              | 2041   | 410    | 0                | 2686   | 43     |
| Presence of On-Street Parking               | No             |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0       | 6     | 6        | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0       | 30    | 30       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0     | 1.0   | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0     | 39    | 0     | 0     | 0       | 12    | 20       | 69      | 0       | 0       | 49      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 22      | 0       | 0       | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       |         | No    |          | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Maximum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Pedestrian Recall            |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | R     | L     | C     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 32    | 32    | 32    | 8     | 15    | 68    | 49    | 49    |
| g / C, Green / Cycle                    | 0.27  | 0.27  | 0.27  | 0.07  | 0.13  | 0.57  | 0.41  | 0.41  |
| (v / s)_i Volume / Saturation Flow Rate | 0.23  | 0.23  | 0.22  | 0.06  | 0.11  | 0.36  | 0.36  | 0.36  |
| s, saturation flow rate [veh/h]         | 3500  | 1800  | 1900  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 929   | 478   | 504   | 255   | 232   | 3236  | 2311  | 770   |
| d1, Uniform Delay [s]                   | 42.30 | 42.31 | 41.64 | 55.41 | 51.39 | 17.48 | 33.11 | 33.11 |
| k, delay calibration                    | 0.11  | 0.31  | 0.28  | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 2.98  | 14.15 | 9.21  | 7.88  | 10.55 | 0.95  | 5.46  | 14.20 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.88   | 0.88   | 0.84   | 0.85   | 0.88   | 0.63   | 0.89   | 0.89   |
| d, Delay for Lane Group [s/veh]       | 45.28  | 56.46  | 50.85  | 63.28  | 61.93  | 18.42  | 38.57  | 47.31  |
| Lane Group LOS                        | D      | E      | D      | E      | E      | B      | D      | D      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 11.94  | 13.78  | 13.01  | 3.53   | 6.73   | 12.51  | 19.21  | 21.08  |
| 50th-Percentile Queue Length [ft/ln]  | 298.53 | 344.60 | 325.19 | 88.16  | 168.29 | 312.82 | 480.19 | 526.94 |
| 95th-Percentile Queue Length [veh/ln] | 17.61  | 19.87  | 18.92  | 6.35   | 10.99  | 18.31  | 26.40  | 28.61  |
| 95th-Percentile Queue Length [ft/ln]  | 440.21 | 496.82 | 473.06 | 158.69 | 274.66 | 457.85 | 659.88 | 715.18 |

**Movement, Approach, & Intersection Results**

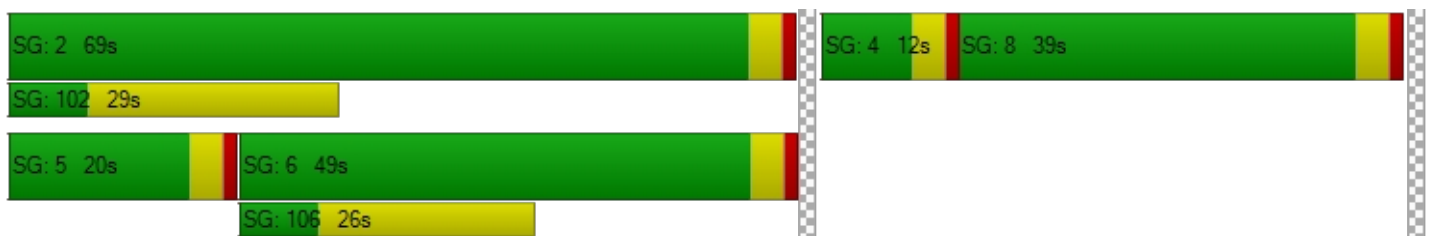
|                                 |       |       |       |       |      |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 48.14 | 56.46 | 51.62 | 0.00  | 0.00 | 63.28 | 61.93 | 18.42 | 0.00 | 0.00  | 40.65 | 47.31 |
| Movement LOS                    | D     | E     | D     |       |      | E     | E     | B     |      |       | D     | D     |
| d_A, Approach Delay [s/veh]     | 49.53 |       |       | 63.28 |      |       | 22.39 |       |      | 40.76 |       |       |
| Approach LOS                    | D     |       |       | E     |      |       | C     |       |      | D     |       |       |
| d_I, Intersection Delay [s/veh] | 37.58 |       |       |       |      |       |       |       |      |       |       |       |
| Intersection LOS                | D     |       |       |       |      |       |       |       |      |       |       |       |
| Intersection V/C                | 0.850 |       |       |       |      |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.638 | 2.129 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 583   | 133   | 1083  | 750   |
| d_b, Bicycle Delay [s]                                   | 30.11 | 52.27 | 12.61 | 23.44 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.305 | 1.560 | 2.795 | 2.685 |
| Bicycle LOS  | E     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 43.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.893 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                 |        |        | No                 |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   | 240                | 282    | 92     | 320                | 380    | 280    | 296              | 2073   | 153    | 191              | 1967   | 203    |
| Base Volume Input [veh/h]                   | 240                | 282    | 92     | 320                | 380    | 280    | 296              | 2073   | 153    | 191              | 1967   | 203    |
| Base Volume Adjustment Factor               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 240                | 282    | 92     | 320                | 380    | 280    | 296              | 2073   | 153    | 191              | 1967   | 203    |
| Peak Hour Factor                            | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 60                 | 71     | 23     | 80                 | 95     | 70     | 74               | 518    | 38     | 48               | 492    | 51     |
| Total Analysis Volume [veh/h]               | 240                | 282    | 92     | 320                | 380    | 280    | 296              | 2073   | 153    | 191              | 1967   | 203    |
| Presence of On-Street Parking               | No                 |        | No     | No                 |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 13       | 39      | 0       | 15       | 41      | 0       | 25       | 49      | 0       | 17       | 41      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 29      | 0       | 0        | 26      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 9     | 25    | 25    | 11    | 27    | 27    | 21    | 55    | 55    | 13    | 47    | 47    |
| g / C, Green / Cycle                    | 0.08  | 0.21  | 0.21  | 0.09  | 0.22  | 0.22  | 0.18  | 0.46  | 0.46  | 0.11  | 0.39  | 0.39  |
| (v / s)_i Volume / Saturation Flow Rate | 0.07  | 0.10  | 0.09  | 0.09  | 0.20  | 0.15  | 0.16  | 0.39  | 0.40  | 0.11  | 0.28  | 0.29  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  | 1800  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 267   | 392   | 392   | 325   | 424   | 424   | 316   | 1741  | 871   | 197   | 2235  | 745   |
| d1, Uniform Delay [s]                   | 55.02 | 42.12 | 41.78 | 54.41 | 45.33 | 42.53 | 48.88 | 28.73 | 29.34 | 53.30 | 30.95 | 31.41 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.20  | 0.11  | 0.20  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 10.51 | 0.97  | 0.84  | 19.94 | 11.94 | 1.77  | 20.00 | 5.17  | 11.62 | 23.50 | 2.05  | 6.78  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.90   | 0.49   | 0.46   | 0.99   | 0.90   | 0.66   | 0.94   | 0.84   | 0.87   | 0.97   | 0.72   | 0.75   |
| d, Delay for Lane Group [s/veh]       | 65.54  | 43.09  | 42.62  | 74.34  | 57.27  | 44.30  | 68.87  | 33.90  | 40.96  | 76.80  | 33.00  | 38.20  |
| Lane Group LOS                        | E      | D      | D      | E      | E      | D      | E      | C      | D      | E      | C      | D      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.99   | 5.20   | 4.78   | 5.72   | 12.34  | 7.77   | 10.48  | 19.37  | 21.93  | 7.02   | 13.44  | 15.11  |
| 50th-Percentile Queue Length [ft/ln]  | 99.75  | 130.02 | 119.50 | 143.07 | 308.61 | 194.27 | 261.92 | 484.16 | 548.13 | 175.47 | 335.92 | 377.77 |
| 95th-Percentile Queue Length [veh/ln] | 7.18   | 8.94   | 8.37   | 9.65   | 18.11  | 12.34  | 15.79  | 26.58  | 29.60  | 11.36  | 19.45  | 21.49  |
| 95th-Percentile Queue Length [ft/ln]  | 179.55 | 223.53 | 209.14 | 241.16 | 452.66 | 308.57 | 394.63 | 664.58 | 740.11 | 284.09 | 486.21 | 537.15 |

**Movement, Approach, & Intersection Results**

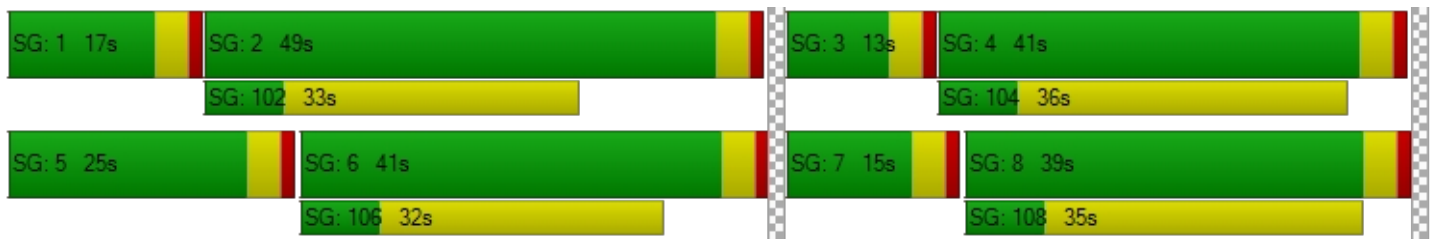
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 65.54 | 42.94 | 42.62 | 74.34 | 57.27 | 44.30 | 68.87 | 35.96 | 40.96 | 76.80 | 33.94 | 38.20 |
| Movement LOS                    | E     | D     | D     | E     | E     | D     | E     | D     | D     | E     | C     | D     |
| d_A, Approach Delay [s/veh]     | 51.72 |       |       | 59.14 |       |       | 40.13 |       |       | 37.77 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | D     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 43.24 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.893 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.54 |  |  | 49.54 |  |  | 49.54 |  |  | 49.54 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.575 |  |  | 2.753 |  |  | 3.350 |  |  | 3.330 |  |  |
| Crosswalk LOS  | B     |  |  | C     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 583   |  |  | 616   |  |  | 750   |  |  | 616   |  |  |
| d_b, Bicycle Delay [s]                                   | 30.13 |  |  | 28.73 |  |  | 23.46 |  |  | 28.73 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.066 |  |  | 3.177 |  |  | 2.947 |  |  | 2.534 |  |  |
| Bicycle LOS  | B     |  |  | C     |  |  | C     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.820 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | ⇐⇐⇐              |        |        | ⇐⇐              |        |        | ⇐   ⇐            |        |        | ⇐   ⇐            |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No               |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name  | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 276              | 51     | 292    | 28              | 25     | 15     | 21               | 2088   | 308    | 254              | 2154   | 63     |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 276              | 51     | 292    | 28              | 25     | 15     | 21               | 2088   | 308    | 254              | 2154   | 63     |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 69               | 13     | 73     | 7               | 6      | 4      | 5                | 522    | 77     | 64               | 539    | 16     |
| Total Analysis Volume [veh/h]               | 276              | 51     | 292    | 28              | 25     | 15     | 21               | 2088   | 308    | 254              | 2154   | 63     |
| Presence of On-Street Parking               | No               |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 26    | 0     | 0     | 10    | 0     | 10       | 32      | 0       | 27       | 49      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0        | 21      | 0       | 0        | 14      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 17    | 17    | 17    | 5     | 5     | 3     | 41    | 41    | 15    | 54    | 54    |
| g / C, Green / Cycle                    | 0.18  | 0.18  | 0.18  | 0.05  | 0.05  | 0.03  | 0.43  | 0.43  | 0.16  | 0.57  | 0.57  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.09  | 0.15  | 0.02  | 0.02  | 0.01  | 0.37  | 0.16  | 0.14  | 0.38  | 0.40  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 1800  | 1900  | 1800  | 5700  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 325   | 325   | 343   | 97    | 102   | 51    | 2474  | 825   | 294   | 2164  | 1082  |
| d1, Uniform Delay [s]                   | 35.12 | 35.17 | 37.76 | 43.27 | 43.51 | 45.47 | 24.04 | 18.18 | 38.77 | 14.31 | 14.70 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.19  | 1.22  | 5.96  | 1.62  | 2.42  | 5.31  | 3.73  | 1.29  | 7.45  | 1.70  | 3.82  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.50   | 0.51   | 0.85   | 0.29  | 0.39  | 0.41  | 0.84   | 0.37   | 0.86   | 0.67   | 0.70   |
| d, Delay for Lane Group [s/veh]       | 36.31  | 36.39  | 43.72  | 44.90 | 45.94 | 50.77 | 27.78  | 19.48  | 46.22  | 16.01  | 18.52  |
| Lane Group LOS                        | D      | D      | D      | D     | D     | D     | C      | B      | D      | B      | B      |
| Critical Lane Group                   | No     | No     | Yes    | No    | Yes   | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.45   | 3.51   | 7.04   | 0.67  | 0.97  | 0.56  | 14.08  | 4.72   | 6.29   | 10.52  | 11.87  |
| 50th-Percentile Queue Length [ft/ln]  | 86.35  | 87.70  | 175.95 | 16.82 | 24.32 | 13.98 | 352.11 | 118.10 | 157.36 | 263.01 | 296.64 |
| 95th-Percentile Queue Length [veh/ln] | 6.22   | 6.31   | 11.39  | 1.21  | 1.75  | 1.01  | 20.24  | 8.29   | 10.41  | 15.84  | 17.51  |
| 95th-Percentile Queue Length [ft/ln]  | 155.43 | 157.87 | 284.72 | 30.28 | 43.77 | 25.17 | 505.97 | 207.22 | 260.22 | 396.00 | 437.87 |

**Movement, Approach, & Intersection Results**

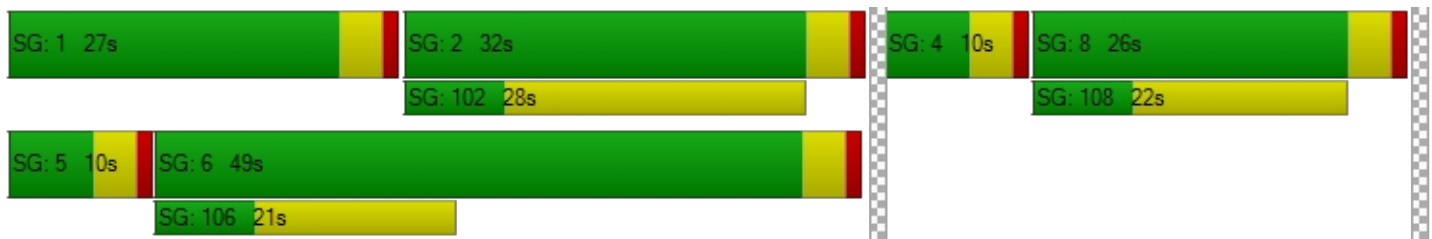
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 36.34 | 36.39 | 43.72 | 44.90 | 45.94 | 45.94 | 50.77 | 27.78 | 19.48 | 46.22 | 16.82 | 18.52 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | C     | B     | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 39.83 |       |       | 45.51 |       |       | 26.92 |       |       | 19.89 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | B     |       |       |
| d_I, Intersection Delay [s/veh] | 25.46 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.820 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.18 | 37.18 | 0.00  | 37.18 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.427 | 2.008 | 0.000 | 3.276 |
| Crosswalk LOS  | B     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 463   | 126   | 589   | 947   |
| d_b, Bicycle Delay [s]                                   | 28.09 | 41.73 | 23.66 | 13.19 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.581 | 1.672 | 2.889 | 2.919 |
| Bicycle LOS  | B     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 36.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.858 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O T             |        |        | T O T             |        |        | T O T            |        |        | T O T            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                   |        |        |                   |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 398               | 661    | 112    | 286               | 507    | 127    | 235              | 1557   | 239    | 201              | 1718   | 347    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 398               | 661    | 112    | 286               | 507    | 127    | 235              | 1557   | 239    | 201              | 1718   | 347    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 100               | 165    | 28     | 72                | 127    | 32     | 59               | 389    | 60     | 50               | 430    | 87     |
| Total Analysis Volume [veh/h]               | 398               | 661    | 112    | 286               | 507    | 127    | 235              | 1557   | 239    | 201              | 1718   | 347    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 19       | 35      | 0       | 14       | 30      | 0       | 12       | 40      | 0       | 11       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 19      | 0       | 0        | 19      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 13    | 24    | 24    | 10    | 20    | 20    | 8     | 43    | 43    | 7     | 42    | 42    |
| g / C, Green / Cycle                    | 0.13  | 0.24  | 0.24  | 0.10  | 0.20  | 0.20  | 0.08  | 0.43  | 0.43  | 0.07  | 0.42  | 0.42  |
| (v / s)_i Volume / Saturation Flow Rate | 0.11  | 0.21  | 0.20  | 0.08  | 0.13  | 0.07  | 0.07  | 0.32  | 0.31  | 0.06  | 0.36  | 0.36  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 474   | 450   | 450   | 354   | 769   | 385   | 285   | 1638  | 819   | 251   | 1600  | 800   |
| d1, Uniform Delay [s]                   | 42.29 | 36.91 | 36.45 | 44.10 | 36.80 | 34.18 | 45.35 | 23.74 | 23.64 | 45.85 | 26.41 | 26.24 |
| k, delay calibration                    | 0.11  | 0.22  | 0.19  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.06  | 10.71 | 7.31  | 4.36  | 0.97  | 0.50  | 5.94  | 2.95  | 5.59  | 5.90  | 6.45  | 11.24 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.88   | 0.84   | 0.81   | 0.66   | 0.33   | 0.82   | 0.73   | 0.73   | 0.80   | 0.86   | 0.85   |
| d, Delay for Lane Group [s/veh]       | 46.35  | 47.63  | 43.76  | 48.47  | 37.78  | 34.68  | 51.28  | 26.69  | 29.23  | 51.75  | 32.85  | 37.48  |
| Lane Group LOS                        | D      | D      | D      | D      | D      | C      | D      | C      | C      | D      | C      | D      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | No     | No     | Yes    | No     | No     | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 5.02   | 10.52  | 9.55   | 3.66   | 5.75   | 2.68   | 3.09   | 12.00  | 12.45  | 2.65   | 15.74  | 16.56  |
| 50th-Percentile Queue Length [ft/ln]  | 125.62 | 263.03 | 238.70 | 91.54  | 143.77 | 67.01  | 77.32  | 299.98 | 311.27 | 66.34  | 393.54 | 413.93 |
| 95th-Percentile Queue Length [veh/ln] | 8.70   | 15.84  | 14.62  | 6.59   | 9.68   | 4.82   | 5.57   | 17.68  | 18.24  | 4.78   | 22.25  | 23.23  |
| 95th-Percentile Queue Length [ft/ln]  | 217.53 | 396.02 | 365.39 | 164.77 | 242.10 | 120.62 | 139.17 | 442.00 | 455.94 | 119.42 | 556.21 | 580.77 |

**Movement, Approach, & Intersection Results**

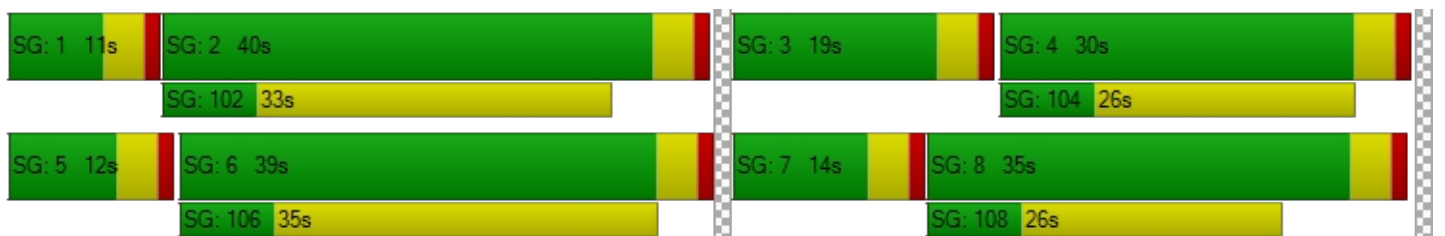
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 46.35 | 46.08 | 43.76 | 48.47 | 37.78 | 34.68 | 51.28 | 27.27 | 29.23 | 51.75 | 33.76 | 37.48 |
| Movement LOS                    | D     | D     | D     | D     | D     | C     | D     | C     | C     | D     | C     | D     |
| d_A, Approach Delay [s/veh]     | 45.95 |       |       | 40.67 |       |       | 30.28 |       |       | 35.93 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 36.65 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.858 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 39.67 | 39.67 | 39.67 | 39.67 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.802 | 2.900 | 3.251 | 3.245 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 619   | 519   | 719   | 699   |
| d_b, Bicycle Delay [s]                                   | 23.87 | 27.45 | 20.54 | 21.19 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.526 | 2.319 | 2.677 | 2.806 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.617 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Symbol]        |        |        | [Symbol]        |        |        | [Symbol]         |        |        | [Symbol]         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                 |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 125             | 284    | 138    | 229             | 233    | 141    | 252              | 1957   | 163    | 180              | 1457   | 143    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 125             | 284    | 138    | 229             | 233    | 141    | 252              | 1957   | 163    | 180              | 1457   | 143    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 31              | 71     | 35     | 57              | 58     | 35     | 63               | 489    | 41     | 45               | 364    | 36     |
| Total Analysis Volume [veh/h]               | 125             | 284    | 138    | 229             | 233    | 141    | 252              | 1957   | 163    | 180              | 1457   | 143    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 13       | 46      | 0       | 15       | 48      | 0       | 20       | 47      | 0       | 12       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 35      | 0       | 0        | 37      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 12    | 12    | 10    | 15    | 15    | 11    | 74    | 74   | 8     | 72    | 72    |
| g / C, Green / Cycle                    | 0.05  | 0.10  | 0.10  | 0.08  | 0.13  | 0.13  | 0.09  | 0.62  | 0.62 | 0.07  | 0.60  | 0.60  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.07  | 0.07  | 0.07  | 0.06  | 0.07  | 0.07  | 0.34  | 0.09 | 0.05  | 0.26  | 0.08  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 5700  | 1900 | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 183   | 372   | 186   | 288   | 486   | 243   | 317   | 3530  | 1177 | 236   | 3397  | 1132  |
| d1, Uniform Delay [s]                   | 55.92 | 52.79 | 52.67 | 54.11 | 48.64 | 49.32 | 53.50 | 13.25 | 9.52 | 55.05 | 13.16 | 10.59 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.45  | 3.27  | 5.72  | 5.00  | 0.74  | 2.19  | 4.53  | 0.63  | 0.25 | 5.09  | 0.40  | 0.23  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |        |        |        |        |        |       |        |        |       |
|---------------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|
| X, volume / capacity                  | 0.68  | 0.76   | 0.74   | 0.80   | 0.48   | 0.58   | 0.79   | 0.55   | 0.14  | 0.76   | 0.43   | 0.13  |
| d, Delay for Lane Group [s/veh]       | 60.37 | 56.06  | 58.39  | 59.11  | 49.38  | 51.51  | 58.03  | 13.88  | 9.76  | 60.14  | 13.56  | 10.82 |
| Lane Group LOS                        | E     | E      | E      | E      | D      | D      | E      | B      | A     | E      | B      | B     |
| Critical Lane Group                   | No    | Yes    | No     | Yes    | No     | No     | No     | Yes    | No    | Yes    | No     | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.97  | 4.34   | 4.34   | 3.60   | 3.30   | 4.14   | 3.93   | 9.93   | 1.82  | 2.84   | 7.02   | 1.71  |
| 50th-Percentile Queue Length [ft/ln]  | 49.37 | 108.58 | 108.58 | 89.92  | 82.53  | 103.45 | 98.15  | 248.13 | 45.62 | 71.11  | 175.38 | 42.63 |
| 95th-Percentile Queue Length [veh/ln] | 3.55  | 7.76   | 7.76   | 6.47   | 5.94   | 7.45   | 7.07   | 15.09  | 3.28  | 5.12   | 11.36  | 3.07  |
| 95th-Percentile Queue Length [ft/ln]  | 88.87 | 194.03 | 194.02 | 161.86 | 148.56 | 186.21 | 176.67 | 377.30 | 82.11 | 128.00 | 283.97 | 76.74 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 60.37 | 56.06 | 58.39 | 59.11 | 49.38 | 51.51 | 58.03 | 13.88 | 9.76 | 60.14 | 13.56 | 10.82 |
| Movement LOS                    | E     | E     | E     | E     | D     | D     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 57.63 |       |       | 53.57 |       |       | 18.29 |       |      | 18.05 |       |       |
| Approach LOS                    | E     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 26.28 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.617 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.764 | 2.786 | 3.307 | 3.308 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 700   | 733   | 716   | 583   |
| d_b, Bicycle Delay [s]                                   | 25.36 | 24.08 | 24.72 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.011 | 2.057 | 2.864 | 2.539 |
| Bicycle LOS  | B     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 228.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.046 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |



**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |            |        |        |            |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 271        | 534    | 129    | 984        | 464    | 21     | 73               | 1905   | 300    | 168              | 1479   | 845    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 271        | 534    | 129    | 984        | 464    | 21     | 73               | 1905   | 300    | 168              | 1479   | 845    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 68         | 134    | 32     | 246        | 116    | 5      | 18               | 476    | 75     | 42               | 370    | 211    |
| Total Analysis Volume [veh/h]               | 271        | 534    | 129    | 984        | 464    | 21     | 73               | 1905   | 300    | 168              | 1479   | 845    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 15       | 53      | 0       | 12       | 50      | 0       | 10       | 45      | 0       | 10       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 42      | 0       | 0        | 36      | 0       | 0        | 34      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L       | C     | R     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00    | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00    | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 11    | 20    | 20    | 8       | 17    | 17    | 6     | 70    | 70    | 6     | 70    | 70    |
| g / C, Green / Cycle                    | 0.09  | 0.17  | 0.17  | 0.07    | 0.14  | 0.14  | 0.05  | 0.58  | 0.58  | 0.05  | 0.58  | 0.58  |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.14  | 0.07  | 0.28    | 0.12  | 0.01  | 0.04  | 0.39  | 0.39  | 0.05  | 0.26  | 0.44  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500    | 3800  | 1900  | 1800  | 3800  | 1900  | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 323   | 645   | 323   | 236     | 551   | 275   | 91    | 2199  | 1100  | 178   | 3299  | 1100  |
| d1, Uniform Delay [s]                   | 53.62 | 48.13 | 44.38 | 55.99   | 49.99 | 44.38 | 56.38 | 17.37 | 17.38 | 56.82 | 14.38 | 19.18 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.13    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.83  | 2.79  | 0.80  | 1431.12 | 3.59  | 0.12  | 14.58 | 1.63  | 3.24  | 20.66 | 0.44  | 5.17  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |       |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|-------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.83   | 0.40   | 4.17    | 0.84   | 0.08  | 0.80   | 0.67   | 0.67   | 0.95   | 0.45   | 0.77   |
| d, Delay for Lane Group [s/veh]       | 59.45  | 50.92  | 45.18  | 1487.11 | 53.58  | 44.50 | 70.96  | 19.00  | 20.61  | 77.48  | 14.83  | 24.36  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D     | E      | B      | C      | E      | B      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes     | No     | No    | Yes    | No     | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 4.28   | 7.95   | 3.50   | 50.42   | 7.05   | 0.55  | 2.56   | 13.84  | 14.35  | 3.05   | 7.55   | 18.52  |
| 50th-Percentile Queue Length [ft/ln]  | 107.11 | 198.84 | 87.59  | 1260.48 | 176.20 | 13.83 | 63.99  | 345.90 | 358.72 | 76.23  | 188.68 | 463.08 |
| 95th-Percentile Queue Length [veh/ln] | 7.68   | 12.58  | 6.31   | 76.00   | 11.40  | 1.00  | 4.61   | 19.94  | 20.56  | 5.49   | 12.05  | 25.58  |
| 95th-Percentile Queue Length [ft/ln]  | 191.98 | 314.47 | 157.67 | 1900.04 | 285.05 | 24.89 | 115.18 | 498.41 | 514.03 | 137.21 | 301.31 | 639.54 |

**Movement, Approach, & Intersection Results**

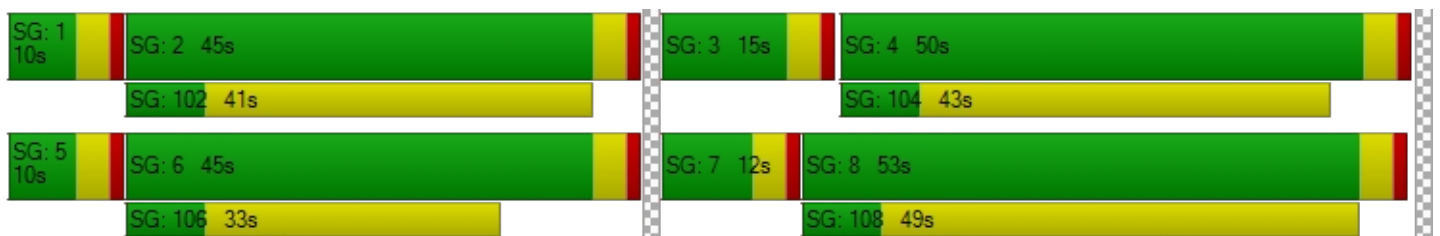
|                                 |        |       |       |         |       |       |       |       |       |       |       |       |
|---------------------------------|--------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 59.45  | 50.92 | 45.18 | 1487.11 | 53.58 | 44.50 | 70.96 | 19.37 | 20.61 | 77.48 | 14.83 | 24.36 |
| Movement LOS                    | E      | D     | D     | F       | D     | D     | E     | B     | C     | E     | B     | C     |
| d_A, Approach Delay [s/veh]     | 52.60  |       |       | 1013.69 |       |       | 21.18 |       |       | 22.28 |       |       |
| Approach LOS                    | D      |       |       | F       |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 228.92 |       |       |         |       |       |       |       |       |       |       |       |
| Intersection LOS                | F      |       |       |         |       |       |       |       |       |       |       |       |
| Intersection V/C                | 1.046  |       |       |         |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.868 | 3.015 | 3.172 | 3.460 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 816   | 766   | 683   | 683   |
| d_b, Bicycle Delay [s]                                   | 21.02 | 22.83 | 26.02 | 26.02 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.330 | 2.772 | 2.813 | 2.930 |
| Bicycle LOS  | B     | C     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



*APPENDIX D-III*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**

**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 38.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.858 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T T T    |      |      | T T T T T    |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name   | St Co |      |      | St Co |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 185   | 238  | 225  | 963   | 659  | 9    | 15           | 152  | 230  | 517          | 196  | 597  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 185   | 238  | 225  | 963   | 659  | 9    | 15           | 152  | 230  | 517          | 196  | 597  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 46    | 60   | 56   | 241   | 165  | 2    | 4            | 382  | 58   | 129          | 492  | 149  |
| Total Analysis Volume [veh/h]                                  | 185   | 238  | 225  | 963   | 659  | 9    | 15           | 152  | 230  | 517          | 196  | 597  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Ove  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 6    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      | 6,7  |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 6    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 30   |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 1.0  |
| Split [s]                    | 12   | 15   | 0    | 41   | 44   | 0    | 10   | 40   | 0    | 24   | 54   | 54   |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  |
| Walk [s]                     | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 7    |
| Pedestrian Clearance [s]     | 0    | 0    | 0    | 0    | 33   | 0    | 0    | 28   | 0    | 0    | 22   | 22   |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   | No   |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   | No   |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   | No   |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L   | C   | C   | R   | L    | C    | C    | L    | C    | C    | L    | C    | R    |
|---|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 12  | 12  | 12  | 12  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.0 | 4.0 | 4.0 | 4.0 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.0 | 2.0 | 2.0 | 2.0 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s]           | 8   | 12  | 12  | 12  | 36   | 40   | 40   | 2    | 36   | 36   | 20   | 54   | 93   |
| g / C, Green / Cycle                    | 0.0 | 0.1 | 0.1 | 0.1 | 0.30 | 0.33 | 0.33 | 0.02 | 0.30 | 0.30 | 0.16 | 0.45 | 0.78 |
| (v / s)_i Volume / Saturation Flow Rate | 0.0 | 0.0 | 0.0 | 0.0 | 0.28 | 0.18 | 0.18 | 0.00 | 0.23 | 0.23 | 0.15 | 0.35 | 0.31 |
| s, saturation flow rate [veh/h]         | 35  | 19  | 19  | 19  | 350  | 190  | 190  | 350  | 570  | 190  | 350  | 570  | 190  |
| c, Capacity [veh/h]                     | 23  | 19  | 19  | 19  | 104  | 632  | 632  | 72   | 173  | 577  | 571  | 254  | 147  |
| d1, Uniform Delay [s]                   | 55. | 53. | 52. | 52. | 40.8 | 32.4 | 32.4 | 57.8 | 37.8 | 37.9 | 49.3 | 28.1 | 4.35 |
| k, delay calibration                    | 0.1 | 0.1 | 0.1 | 0.1 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.6 | 10. | 6.9 | 5.4 | 4.05 | 0.71 | 0.70 | 1.41 | 3.21 | 9.46 | 5.73 | 2.38 | 0.82 |
| d3, Initial Queue Delay [s]             | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |     |     |     |     |      |      |      |      |      |      |      |      |      |
|---------------------------------------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.7 | 0.8 | 0.7 | 0.7 | 0.92 | 0.53 | 0.53 | 0.21 | 0.76 | 0.77 | 0.91 | 0.77 | 0.40 |
| d, Delay for Lane Group [s/veh]       | 60. | 63. | 59. | 57. | 44.8 | 33.1 | 33.1 | 59.2 | 41.0 | 47.4 | 55.0 | 30.5 | 5.17 |
| Lane Group LOS                        | E   | E   | E   | E   | D    | C    | C    | E    | D    | D    | E    | C    | A    |
| Critical Lane Group                   | No  | Ye  | No  | No  | Yes  | No   | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.9 | 5.4 | 4.8 | 4.4 | 14.2 | 7.98 | 7.96 | 0.24 | 12.1 | 13.2 | 8.04 | 16.1 | 4.28 |
| 50th-Percentile Queue Length [ft/ln]  | 73. | 13  | 12  | 11  | 355. | 199. | 198. | 5.96 | 302. | 331. | 201. | 404. | 106. |
| 95th-Percentile Queue Length [veh/ln] | 5.3 | 9.3 | 8.5 | 7.9 | 20.4 | 12.6 | 12.5 | 0.43 | 17.8 | 19.2 | 12.7 | 22.7 | 7.67 |
| 95th-Percentile Queue Length [ft/ln]  | 13  | 23  | 21  | 19  | 510. | 315. | 314. | 10.7 | 445. | 480. | 317. | 569. | 191. |

**Movement, Approach, & Intersection Results**

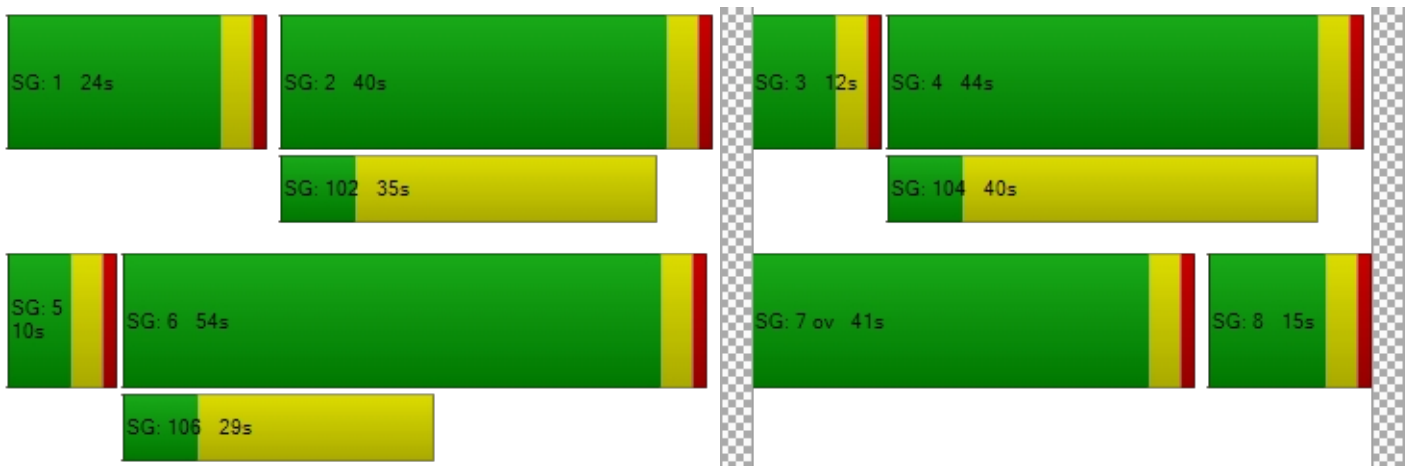
|                                 |       |      |       |      |      |       |      |      |       |      |      |      |
|---------------------------------|-------|------|-------|------|------|-------|------|------|-------|------|------|------|
| d_M, Delay for Movement [s/veh] | 60.8  | 62.1 | 58.3  | 44.8 | 33.1 | 33.1  | 59.2 | 41.9 | 47.4  | 55.0 | 30.5 | 5.17 |
| Movement LOS                    | E     | E    | E     | D    | C    | C     | E    | D    | D     | E    | C    | A    |
| d_A, Approach Delay [s/veh]     | 60.46 |      | 40.08 |      |      | 42.81 |      |      | 29.72 |      |      |      |
| Approach LOS                    | E     |      | D     |      |      | D     |      |      | C     |      |      |      |
| d_I, Intersection Delay [s/veh] | 38.13 |      |       |      |      |       |      |      |       |      |      |      |
| Intersection LOS                | D     |      |       |      |      |       |      |      |       |      |      |      |
| Intersection V/C                | 0.858 |      |       |      |      |       |      |      |       |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.894 | 2.870 | 3.289 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 183   | 666   | 600   | 833   |
| d_b, Bicycle Delay [s]                                     | 49.52 | 26.68 | 29.41 | 20.43 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.094 | 2.905 | 2.291 | 3.255 |
| Bicycle LOS  | B     | C     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 24.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.810 |

**Intersection Setup**

| Name                         | SR-57      |      |       | SR-57      |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Approach                     | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |            |      |       |            |      |       |              |      |       |              |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 0     | 1          | 0    | 1     | 0            | 0    | 1     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Curb Present                 |            |      |       | No         |      |       | No           |      |       | No           |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | No           |      |       | No           |      |       |

**Volumes**

| Name   | SR-57 |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 0     | 0    | 0    | 106   | 0    | 695  | 0            | 187  | 619  | 276          | 220  | 0    |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 0     | 0    | 0    | 106   | 0    | 695  | 0            | 187  | 619  | 276          | 220  | 0    |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 0     | 0    | 0    | 267   | 0    | 174  | 0            | 468  | 155  | 69           | 552  | 0    |
| Total Analysis Volume [veh/h]                                  | 0     | 0    | 0    | 106   | 0    | 695  | 0            | 187  | 619  | 276          | 220  | 0    |
| Presence of On-Street Parking                                  |       |      |      | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Split | Per  | Split | Per  | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|-------|------|-------|------|------|------|------|------|------|
| Signal Group                 | 0    | 0    | 0    | 7     | 0    | 0     | 0    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |       |      |       |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | Lea   | -    | -     | -    | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 0    | 0    | 6     | 0    | 0     | 0    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 0    | 0    | 30    | 0    | 0     | 0    | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 0.0  | 0.0  | 1.0   | 0.0  | 0.0   | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 0    | 0    | 63    | 0    | 0     | 0    | 23   | 0    | 14   | 37   | 0    |
| Vehicle Extension [s]        | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 12   | 0    | 0    | 20   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      |      |      | No    |      |       |      | No   |      | No   | No   |      |
| Maximum Recall               |      |      |      | No    |      |       |      | No   |      | No   | No   |      |
| Pedestrian Recall            |      |      |      | No    |      |       |      | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              |  | L     | R     | C     | R     | L     | C     |
|---|--|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     |  | 100   | 100   | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           |  | 37    | 37    | 42    | 42    | 10    | 55    |
| g / C, Green / Cycle                    |  | 0.37  | 0.37  | 0.42  | 0.42  | 0.10  | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.31  | 0.18  | 0.33  | 0.16  | 0.08  | 0.39  |
| s, saturation flow rate [veh/h]         |  | 3500  | 3800  | 5700  | 3800  | 3500  | 5700  |
| c, Capacity [veh/h]                     |  | 1284  | 1394  | 2367  | 1578  | 343   | 3153  |
| d1, Uniform Delay [s]                   |  | 28.86 | 24.53 | 25.46 | 20.43 | 44.17 | 16.30 |
| k, delay calibration                    |  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  |
| l, Upstream Filtering Factor            |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               |  | 1.48  | 0.28  | 2.80  | 0.73  | 4.46  | 1.32  |
| d3, Initial Queue Delay [s]             |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |  |        |        |        |        |        |        |
|---------------------------------------|--|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  |  | 0.83   | 0.50   | 0.79   | 0.39   | 0.81   | 0.70   |
| d, Delay for Lane Group [s/veh]       |  | 30.33  | 24.81  | 28.26  | 21.16  | 48.63  | 17.63  |
| Lane Group LOS                        |  | C      | C      | C      | C      | D      | B      |
| Critical Lane Group                   |  | Yes    | No     | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] |  | 11.58  | 6.31   | 13.02  | 5.10   | 3.54   | 11.84  |
| 50th-Percentile Queue Length [ft/ln]  |  | 289.46 | 157.67 | 325.52 | 127.46 | 88.38  | 296.07 |
| 95th-Percentile Queue Length [veh/ln] |  | 17.16  | 10.43  | 18.94  | 8.80   | 6.36   | 17.49  |
| 95th-Percentile Queue Length [ft/ln]  |  | 428.97 | 260.63 | 473.46 | 220.03 | 159.09 | 437.17 |

**Movement, Approach, & Intersection Results**

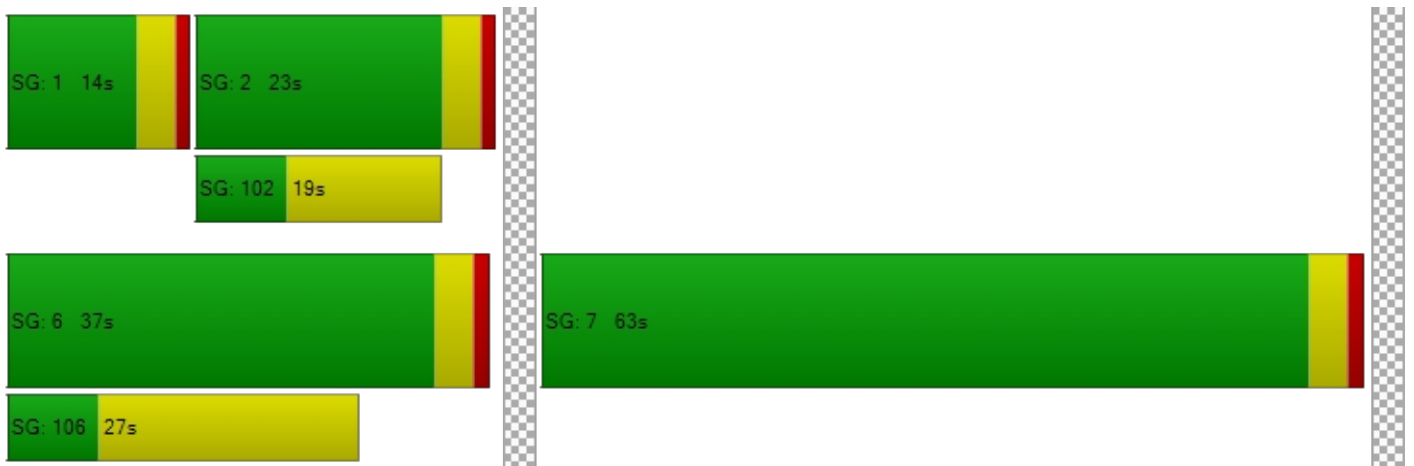
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 30.3  | 0.00 | 24.8 | 0.00  | 28.2 | 21.1 | 48.6  | 17.6 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C    |       | C    | C    | D     | B    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 28.16 |      |      | 26.50 |      |      | 21.07 |      |      |
| Approach LOS                    | A     |      |      | C     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 24.93 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.810 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 39.61 | 39.61 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.156 | 2.566 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 0     | 1180  | 380   | 660   |
| d_b, Bicycle Delay [s]                                     | 50.00 | 8.41  | 32.81 | 22.45 |
| I_b,int, Bicycle LOS Score for Intersection                | 4.132 | 1.560 | 2.930 | 2.926 |
| Bicycle LOS  | D     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 20.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.820 |

**Intersection Setup**

| Name                         | SR-57      |      |      | SR-57      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | ⇐⇐⇐        |      |      |            |      |      | ⇐⇐⇐          |      |      | ⇐⇐⇐          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 0          | 0    | 0    | 1            | 0    | 1    | 0            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      |            |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | No         |      |      | No           |      |      | No           |      |      |



**Volumes**

| Name   | SR-57 |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 105   | 0    | 513  | 0     | 0    | 0    | 0            | 254  | 404  | 0            | 144  | 549  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 105   | 0    | 513  | 0     | 0    | 0    | 0            | 254  | 404  | 0            | 144  | 549  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 0.00 |
| Total 15-Minute Volume [veh/h]                                 | 263   | 0    | 128  | 0     | 0    | 0    | 0            | 637  | 101  | 0            | 362  | 0    |
| Total Analysis Volume [veh/h]                                  | 105   | 0    | 513  | 0     | 0    | 0    | 0            | 254  | 404  | 0            | 144  | 0    |
| Presence of On-Street Parking                                  | No    |      | No   |       |      |      | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Split | Per  | Split | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Unsi |
|------------------------------|-------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3     | 0    | 0     | 0    | 0    | 0    | 0    | 2    | 0    | 0    | 6    | 0    |      |
| Auxiliary Signal Groups      |       |      |       |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea   | -    | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 6     | 0    | 0     | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |      |
| Maximum Green [s]            | 30    | 0    | 0     | 0    | 0    | 0    | 0    | 30   | 0    | 0    | 30   | 0    |      |
| Amber [s]                    | 3.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |      |
| All red [s]                  | 1.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |      |
| Split [s]                    | 54    | 0    | 0     | 0    | 0    | 0    | 0    | 36   | 0    | 0    | 36   | 0    |      |
| Vehicle Extension [s]        | 3.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |      |
| Walk [s]                     | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    |      |
| Pedestrian Clearance [s]     | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 25   | 0    | 0    | 0    | 0    |      |
| Delayed Vehicle Green [s]    | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |      |
| Rest In Walk                 | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |      |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |      |
| Minimum Recall               | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| Maximum Recall               | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| Pedestrian Recall            | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| Detector Location [ft]       | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |      |
| Detector Length [ft]         | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |      |
| I, Upstream Filtering Factor | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | R     |  | C    | C    | R    | C     |
|---|-------|-------|--|------|------|------|-------|
| C, Cycle Length [s]                     | 90    | 90    |  | 90   | 90   | 90   | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00 | 4.00 | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00 | 2.00 | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           | 32    | 32    |  | 50   | 50   | 50   | 50    |
| g / C, Green / Cycle                    | 0.36  | 0.36  |  | 0.55 | 0.55 | 0.55 | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate | 0.30  | 0.27  |  | 0.45 | 0.45 | 0.21 | 0.25  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 380  | 190  | 190  | 5700  |
| c, Capacity [veh/h]                     | 1253  | 680   |  | 210  | 105  | 105  | 3152  |
| d1, Uniform Delay [s]                   | 26.46 | 25.36 |  | 16.2 | 16.2 | 11.4 | 12.02 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.50 | 0.50 | 0.50 | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00  |
| d2, Incremental Delay [s]               | 1.58  | 1.73  |  | 3.47 | 6.69 | 1.07 | 0.48  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00  |

**Lane Group Results**

|                                       |        |        |  |      |      |      |        |
|---------------------------------------|--------|--------|--|------|------|------|--------|
| X, volume / capacity                  | 0.84   | 0.75   |  | 0.81 | 0.81 | 0.38 | 0.46   |
| d, Delay for Lane Group [s/veh]       | 28.04  | 27.09  |  | 19.6 | 22.9 | 12.4 | 12.51  |
| Lane Group LOS                        | C      | C      |  | B    | C    | B    | B      |
| Critical Lane Group                   | Yes    | No     |  | Yes  | No   | No   | No     |
| 50th-Percentile Queue Length [veh/ln] | 10.14  | 9.56   |  | 13.7 | 14.6 | 4.57 | 5.50   |
| 50th-Percentile Queue Length [ft/ln]  | 253.54 | 238.97 |  | 343. | 367. | 114. | 137.42 |
| 95th-Percentile Queue Length [veh/ln] | 15.36  | 14.63  |  | 19.8 | 20.9 | 8.07 | 9.34   |
| 95th-Percentile Queue Length [ft/ln]  | 384.11 | 365.73 |  | 495. | 524. | 201. | 233.54 |

**Movement, Approach, & Intersection Results**

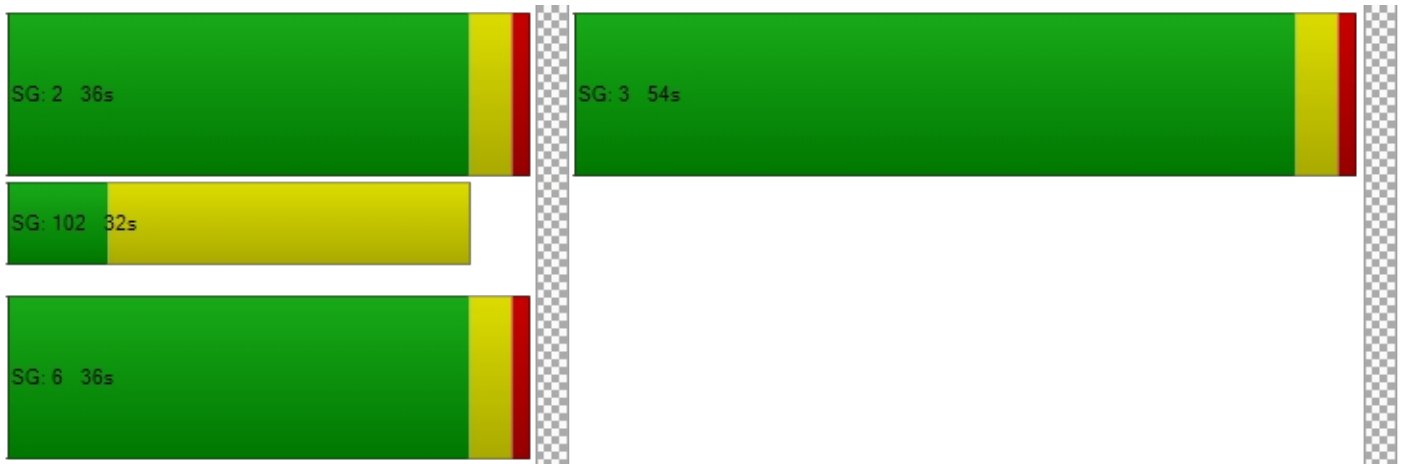
|                                 |       |      |      |      |      |      |       |      |      |       |      |      |      |
|---------------------------------|-------|------|------|------|------|------|-------|------|------|-------|------|------|------|
| d_M, Delay for Movement [s/veh] | 28.0  | 0.00 | 27.0 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00 | 20.4 | 12.4  | 0.00 | 12.5 | 0.00 |
| Movement LOS                    | C     |      | C    |      |      |      |       |      | C    | B     |      | B    |      |
| d_A, Approach Delay [s/veh]     | 27.73 |      |      | 0.00 |      |      | 19.63 |      |      | 12.51 |      |      |      |
| Approach LOS                    | C     |      |      | A    |      |      | B     |      |      | B     |      |      |      |
| d_I, Intersection Delay [s/veh] | 20.03 |      |      |      |      |      |       |      |      |       |      |      |      |
| Intersection LOS                | C     |      |      |      |      |      |       |      |      |       |      |      |      |
| Intersection V/C                | 0.820 |      |      |      |      |      |       |      |      |       |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 0.0   | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.63 | 0.00  | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.683 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | F     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1112  | 0     | 712   | 712   |
| d_b, Bicycle Delay [s]                                     | 8.86  | 44.96 | 18.65 | 18.65 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.560 | 4.132 | 3.183 | 2.355 |
| Bicycle LOS  | A     | D     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 14.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.662 |

**Intersection Setup**

| Name                         | Pointe Drive |      |      | Pointe Drive |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound   |      |      | Southbound   |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound   |      |      | Southbound   |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | +            |      |      | +rrr         |      |      | rrrrl        |      |      | rrrrl        |      |      |
| Turning Movement             | Left         | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0            | 0    | 0    | 0            | 0    | 1    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.         | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00        |      |      | 30.00        |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00         |      |      | 0.00         |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No           |      |      | No           |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes          |      |      | Yes          |      |      | No           |      |      | Yes          |      |      |

**Volumes**

| Name   | Pointe Drive |      |      | Pointe Drive |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
|  | 9            | 8    | 7    | 66           | 1    | 130  | 557          | 251  | 40   | 17           | 203  | 183  |
| Base Volume Input [veh/h]                                      | 9            | 8    | 7    | 66           | 1    | 130  | 557          | 251  | 40   | 17           | 203  | 183  |
| Base Volume Adjustment Factor                                  | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 9            | 8    | 7    | 66           | 1    | 130  | 557          | 251  | 40   | 17           | 203  | 183  |
| Peak Hour Factor   | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 2            | 2    | 2    | 17           | 0    | 33   | 139          | 630  | 10   | 4            | 508  | 46   |
| Total Analysis Volume [veh/h]                                  | 9            | 8    | 7    | 66           | 1    | 130  | 557          | 251  | 40   | 17           | 203  | 183  |
| Presence of On-Street Parking                                  | No           |      | No   | No           |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 44   | 0    | 0    | 44   | 0    | 35   | 36   | 0    | 30   | 31   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 33   | 0    | 0    | 0    | 0    | 0    | 14   | 0    | 0    | 20   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110  | 110  | 110  | 110  | 110  | 110  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6     | 6     | 6     | 20   | 89   | 89   | 2    | 71   | 71   |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.06  | 0.19 | 0.81 | 0.81 | 0.02 | 0.65 | 0.65 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.04  | 0.03  | 0.16 | 0.44 | 0.46 | 0.01 | 0.39 | 0.39 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 350  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 150   | 170   | 222   | 648  | 307  | 153  | 41   | 246  | 123  |
| d1, Uniform Delay [s]                   | 49.42 | 50.65 | 50.49 | 43.4 | 3.56 | 3.70 | 53.0 | 11.1 | 11.2 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.49  | 1.48  | 2.45  | 3.48 | 0.70 | 1.55 | 6.71 | 1.07 | 2.24 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.16  | 0.39  | 0.59  | 0.86 | 0.54 | 0.57 | 0.42 | 0.60 | 0.61 |
| d, Delay for Lane Group [s/veh]       | 49.91 | 52.12 | 52.94 | 46.9 | 4.25 | 5.26 | 59.7 | 12.2 | 13.5 |
| Lane Group LOS                        | D     | D     | D     | D    | A    | A    | E    | B    | B    |
| Critical Lane Group                   | No    | Yes   | No    | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 0.65  | 1.87  | 1.82  | 7.60 | 4.67 | 5.44 | 0.54 | 9.79 | 10.4 |
| 50th-Percentile Queue Length [ft/ln]  | 16.26 | 46.79 | 45.45 | 190. | 116. | 136. | 13.4 | 244. | 261. |
| 95th-Percentile Queue Length [veh/ln] | 1.17  | 3.37  | 3.27  | 12.1 | 8.21 | 9.27 | 0.97 | 14.9 | 15.7 |
| 95th-Percentile Queue Length [ft/ln]  | 29.26 | 84.22 | 81.81 | 303. | 205. | 231. | 24.2 | 372. | 394. |



**Movement, Approach, & Intersection Results**

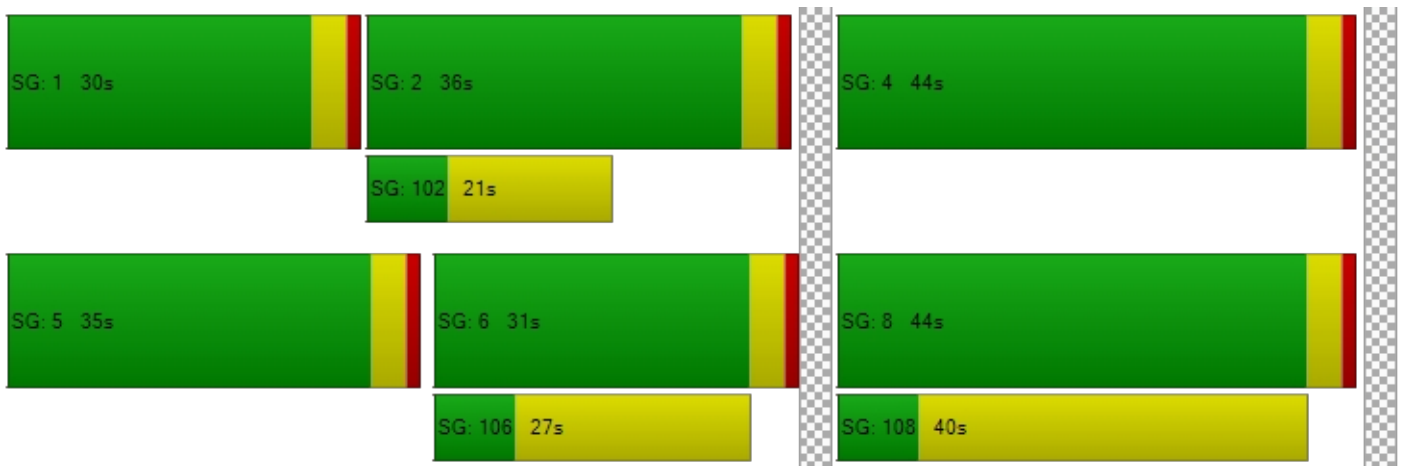
|                                 |       |      |      |       |      |      |       |      |       |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|-------|------|------|------|
| d_M, Delay for Movement [s/veh] | 49.9  | 49.9 | 49.9 | 52.1  | 52.1 | 52.9 | 46.9  | 4.59 | 5.26  | 59.7 | 12.5 | 13.5 |
| Movement LOS                    | D     | D    | D    | D     | D    | D    | D     | A    | A     | E    | B    | B    |
| d_A, Approach Delay [s/veh]     | 49.91 |      |      | 52.66 |      |      | 12.16 |      | 13.01 |      |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | B     |      | B     |      |      |      |
| d_I, Intersection Delay [s/veh] | 14.10 |      |      |       |      |      |       |      |       |      |      |      |
| Intersection LOS                | B     |      |      |       |      |      |       |      |       |      |      |      |
| Intersection V/C                | 0.662 |      |      |       |      |      |       |      |       |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 44.55 | 44.55 | 0.00  | 44.55 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.764 | 2.494 | 0.000 | 3.369 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 727   | 727   | 582   | 491   |
| d_b, Bicycle Delay [s]                                     | 22.27 | 22.27 | 27.65 | 31.31 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.599 | 1.885 | 3.273 | 2.787 |
| Bicycle LOS  | A     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 34.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.882 |

**Intersection Setup**

| Name                         | N As       |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound  |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T        |      |      | T T         |      |      | T T T T      |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left        | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0        | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1           | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.        | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00        | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00       |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00        |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No          |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes         |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | N As |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]                                      | 161  | 307  | 11   | 119         | 208  | 386  | 476          | 201  | 165  | 22           | 160  | 174  |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00        | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 161  | 307  | 11   | 119         | 208  | 386  | 476          | 201  | 165  | 22           | 160  | 174  |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 40   | 77   | 3    | 30          | 52   | 97   | 119          | 503  | 41   | 6            | 402  | 44   |
| Total Analysis Volume [veh/h]                                  | 161  | 307  | 11   | 119         | 208  | 386  | 476          | 201  | 165  | 22           | 160  | 174  |
| Presence of On-Street Parking                                  | No   |      | No   | No          |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 14   | 28   | 0    | 16   | 30   | 0    | 19   | 42   | 0    | 14   | 37   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 16   | 0    | 0    | 19   | 0    | 0    | 20   | 0    | 0    | 20   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L    | C    | R    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 10   | 24   | 24   | 8    | 23   | 23   | 15   | 49   | 49   | 3    | 36   | 36   |
| g / C, Green / Cycle                    | 0.10 | 0.24 | 0.24 | 0.08 | 0.22 | 0.22 | 0.15 | 0.49 | 0.49 | 0.03 | 0.36 | 0.36 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.08 | 0.08 | 0.07 | 0.11 | 0.20 | 0.14 | 0.35 | 0.09 | 0.01 | 0.31 | 0.31 |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 350  | 570  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 181  | 459  | 459  | 150  | 426  | 426  | 526  | 277  | 924  | 52   | 138  | 693  |
| d1, Uniform Delay [s]                   | 44.4 | 31.4 | 31.4 | 45.0 | 33.8 | 37.8 | 41.8 | 20.3 | 14.4 | 47.8 | 29.3 | 29.3 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.21 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 13.5 | 0.45 | 0.45 | 8.98 | 0.87 | 13.2 | 6.12 | 1.69 | 0.42 | 5.49 | 6.97 | 12.9 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.89 | 0.35 | 0.34 | 0.79 | 0.49 | 0.91 | 0.90 | 0.73 | 0.18 | 0.43 | 0.86 | 0.86 |
| d, Delay for Lane Group [s/veh]       | 57.9 | 31.9 | 31.8 | 54.0 | 34.6 | 51.0 | 47.9 | 22.0 | 14.8 | 53.3 | 36.3 | 42.3 |
| Lane Group LOS                        | E    | C    | C    | D    | C    | D    | D    | C    | B    | D    | D    | D    |
| Critical Lane Group                   | Yes  | No   | No   | No   | No   | Yes  | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 4.59 | 3.23 | 3.20 | 3.26 | 4.46 | 10.6 | 6.16 | 12.2 | 2.17 | 0.62 | 14.0 | 15.2 |
| 50th-Percentile Queue Length [ft/ln]  | 114. | 80.6 | 79.8 | 81.3 | 111. | 265. | 154. | 305. | 54.1 | 15.4 | 352. | 381. |
| 95th-Percentile Queue Length [veh/ln] | 8.11 | 5.81 | 5.75 | 5.86 | 7.92 | 15.9 | 10.2 | 17.9 | 3.90 | 1.11 | 20.2 | 21.6 |
| 95th-Percentile Queue Length [ft/ln]  | 202. | 145. | 143. | 146. | 198. | 398. | 255. | 448. | 97.4 | 27.7 | 506. | 542. |

**Movement, Approach, & Intersection Results**

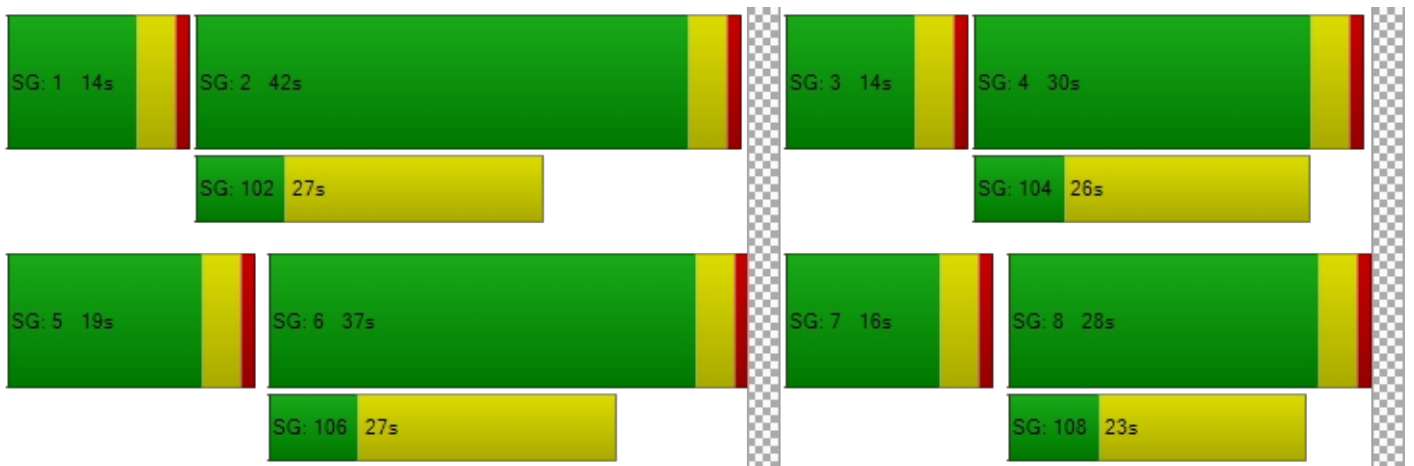
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.9  | 31.8 | 31.8 | 54.0  | 34.6 | 51.0 | 47.9  | 22.0 | 14.8 | 53.3  | 37.9 | 42.3 |
| Movement LOS                    | E     | C    | C    | D     | C    | D    | D     | C    | B    | D     | D    | D    |
| d_A, Approach Delay [s/veh]     | 40.66 |      |      | 46.76 |      |      | 26.28 |      |      | 38.53 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 34.00 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.882 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 39.64 | 39.64 | 39.64 | 39.64 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.475 | 2.630 | 3.375 | 3.148 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 480   | 520   | 759   | 660   |
| d_b, Bicycle Delay [s]                                     | 28.91 | 27.41 | 19.25 | 22.48 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.955 | 2.148 | 3.018 | 2.551 |
| Bicycle LOS  | A     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 30.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.749 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound    |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T           |      |      | T T T        |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left          | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0          | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1             | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.          | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00          | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00         |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00          |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No            |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes           |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | Kr Bo |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]                                      | 323   | 124  | 65   | 21            | 236  | 355  | 109          | 811  | 115  | 347          | 101  | 14   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 323   | 124  | 65   | 21            | 236  | 355  | 109          | 811  | 115  | 347          | 101  | 14   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 81    | 31   | 16   | 5             | 59   | 89   | 27           | 203  | 288  | 87           | 255  | 4    |
| Total Analysis Volume [veh/h]                                  | 323   | 124  | 65   | 21            | 236  | 355  | 109          | 811  | 115  | 347          | 101  | 14   |
| Presence of On-Street Parking                                  | No    |      | No   | No            |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Ove  | Prot | Per  | Per  | Prot | Per  | Ove  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 8    | 7    | 4    | 0    | 5    | 2    | 2    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      | 1,8  |      |      |      |      |      | 2,3  |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 6    | 6    | 6    | 0    | 6    | 6    | 6    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 30   | 30   | 30   | 0    | 30   | 30   | 30   | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 16   | 51   | 51   | 10   | 45   | 0    | 16   | 37   | 37   | 17   | 38   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 7    | 0    | 7    | 0    | 0    | 7    | 7    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 30   | 30   | 0    | 31   | 0    | 0    | 26   | 26   | 0    | 21   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   | No   | No   | No   |      | No   | No   | No   | No   | No   |      |
| Maximum Recall               | No   | No   | No   | No   | No   |      | No   | No   | No   | No   | No   |      |
| Pedestrian Recall            | No   | No   | No   | No   | No   |      | No   | No   | No   | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | R    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 12   | 33   | 50   | 3    | 24   | 24   | 9    | 50   | 66   | 13   | 54   | 54   |
| g / C, Green / Cycle                    | 0.10 | 0.29 | 0.44 | 0.03 | 0.21 | 0.21 | 0.08 | 0.43 | 0.57 | 0.11 | 0.47 | 0.47 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.07 | 0.03 | 0.01 | 0.12 | 0.19 | 0.06 | 0.21 | 0.30 | 0.10 | 0.18 | 0.19 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 180  | 190  | 190  | 180  | 380  | 380  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 367  | 551  | 833  | 48   | 402  | 402  | 136  | 163  | 216  | 397  | 178  | 890  |
| d1, Uniform Delay [s]                   | 50.7 | 31.0 | 18.7 | 55.1 | 40.8 | 43.9 | 52.3 | 23.7 | 15.2 | 50.1 | 19.7 | 19.9 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 6.88 | 0.20 | 0.04 | 6.27 | 1.36 | 6.51 | 10.1 | 1.08 | 0.94 | 6.09 | 0.62 | 1.33 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.88 | 0.22 | 0.08 | 0.44 | 0.59 | 0.88 | 0.80 | 0.50 | 0.53 | 0.87 | 0.38 | 0.40 |
| d, Delay for Lane Group [s/veh]       | 57.6 | 31.2 | 18.8 | 61.4 | 42.1 | 50.4 | 62.5 | 24.7 | 16.1 | 56.2 | 20.4 | 21.3 |
| Lane Group LOS                        | E    | C    | B    | E    | D    | D    | E    | C    | B    | E    | C    | C    |
| Critical Lane Group                   | Yes  | No   | No   | No   | No   | Yes  | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 4.93 | 2.66 | 1.02 | 0.68 | 6.16 | 10.4 | 3.48 | 8.13 | 9.25 | 5.24 | 5.96 | 6.45 |
| 50th-Percentile Queue Length [ft/ln]  | 123. | 66.4 | 25.5 | 17.0 | 154. | 261. | 86.9 | 203. | 231. | 130. | 149. | 161. |
| 95th-Percentile Queue Length [veh/ln] | 8.57 | 4.78 | 1.84 | 1.23 | 10.2 | 15.7 | 6.26 | 12.8 | 14.2 | 8.99 | 9.97 | 10.6 |
| 95th-Percentile Queue Length [ft/ln]  | 214. | 119. | 46.0 | 30.7 | 255. | 394. | 156. | 320. | 355. | 224. | 249. | 265. |

**Movement, Approach, & Intersection Results**

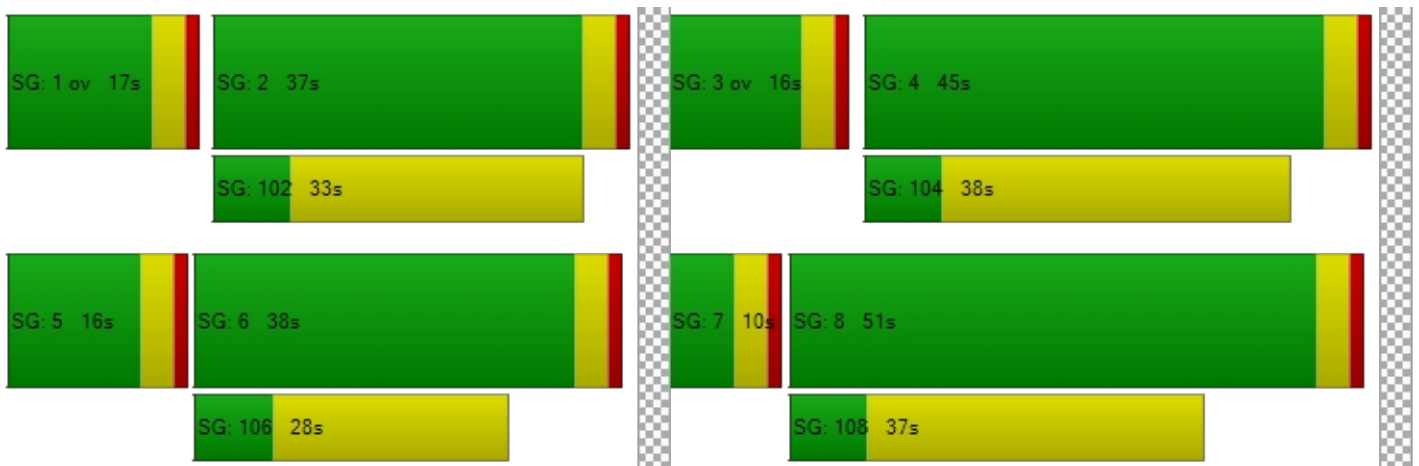
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.6  | 31.2 | 18.8 | 61.4  | 42.1 | 50.4 | 62.5  | 24.7 | 16.1 | 56.2  | 20.7 | 21.3 |
| Movement LOS                    | E     | C    | B    | E     | D    | D    | E     | C    | B    | E     | C    | C    |
| d_A, Approach Delay [s/veh]     | 46.33 |      |      | 47.65 |      |      | 21.99 |      |      | 29.67 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 30.46 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.749 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.830 | 2.352 | 3.197 | 2.923 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 817   | 713   | 574   | 591   |
| d_b, Bicycle Delay [s]                                     | 20.12 | 23.83 | 29.25 | 28.54 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.404 | 2.569 | 3.270 | 2.318 |
| Bicycle LOS  | B     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 6.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.324 |

**Intersection Setup**

| Name                         | Sunflower Street |      |      | Sunflower Street |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------------|------|------|------------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound       |      |      | Southbound       |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     |                  |      |      |                  |      |      |              |      |      |              |      |      |
| Lane Configuration           |                  |      |      |                  |      |      |              |      |      |              |      |      |
| Turning Movement             | Left             | Thru | Righ | Left             | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0             | 12.0 | 12.0 | 12.0             | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1                | 0    | 0    | 0                | 0    | 1    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.             | 100. | 100. | 100.             | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00             | 0.00 | 0.00 | 0.00             | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00            |      |      | 30.00            |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00             |      |      | 0.00             |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No               |      |      | No               |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes              |      |      | Yes              |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | Sunflower Street |      |      | Sunflower Street |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------------------|------|------|------------------|------|------|--------------|------|------|--------------|------|------|
|  |                  |      |      |                  |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 46               | 6    | 18   | 5                | 0    | 6    | 7            | 887  | 49   | 25           | 135  | 2    |
| Base Volume Adjustment Factor                                  | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00             | 2.00 | 2.00 | 2.00             | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 46               | 6    | 18   | 5                | 0    | 6    | 7            | 887  | 49   | 25           | 135  | 2    |
| Peak Hour Factor   | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 12               | 2    | 5    | 1                | 0    | 2    | 2            | 222  | 12   | 6            | 338  | 1    |
| Total Analysis Volume [veh/h]                                  | 46               | 6    | 18   | 5                | 0    | 6    | 7            | 887  | 49   | 25           | 135  | 2    |
| Presence of On-Street Parking                                  | No               |      | No   | No               |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 7    | 0    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 6    | 0    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 30   | 0    | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 40   | 0    | 40   | 0    | 0    | 10   | 30   | 0    | 10   | 30   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 7    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 29   | 0    | 29   | 0    | 0    | 0    | 18   | 0    | 0    | 16   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      | No   |      |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      | No   |      |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      | No   |      |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 2     | 2     | 1    | 93   | 93   | 3    | 95   | 95   |
| g / C, Green / Cycle                    | 0.05  | 0.05  | 0.02  | 0.02  | 0.01 | 0.78 | 0.78 | 0.03 | 0.80 | 0.80 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03  | 0.01  | 0.00  | 0.00  | 0.00 | 0.25 | 0.24 | 0.01 | 0.23 | 0.25 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 180  | 190  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 82    | 87    | 28    | 30    | 20   | 147  | 147  | 52   | 301  | 150  |
| d1, Uniform Delay [s]                   | 56.11 | 55.37 | 58.29 | 58.31 | 58.9 | 3.99 | 3.96 | 57.4 | 3.31 | 3.36 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.88  | 1.71  | 2.88  | 3.19  | 10.6 | 0.57 | 0.56 | 6.83 | 0.25 | 0.53 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.56  | 0.28  | 0.18  | 0.20  | 0.36 | 0.32 | 0.31 | 0.48 | 0.29 | 0.31 |
| d, Delay for Lane Group [s/veh]       | 61.99 | 57.08 | 61.18 | 61.51 | 69.5 | 4.56 | 4.52 | 64.2 | 3.56 | 3.89 |
| Lane Group LOS                        | E     | E     | E     | E     | E    | A    | A    | E    | A    | A    |
| Critical Lane Group                   | Yes   | No    | No    | Yes   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 1.50  | 0.74  | 0.17  | 0.21  | 0.27 | 3.09 | 3.01 | 0.85 | 2.39 | 2.66 |
| 50th-Percentile Queue Length [ft/ln]  | 37.51 | 18.62 | 4.32  | 5.17  | 6.73 | 77.2 | 75.3 | 21.1 | 59.7 | 66.4 |
| 95th-Percentile Queue Length [veh/ln] | 2.70  | 1.34  | 0.31  | 0.37  | 0.48 | 5.56 | 5.43 | 1.52 | 4.30 | 4.78 |
| 95th-Percentile Queue Length [ft/ln]  | 67.51 | 33.51 | 7.78  | 9.31  | 12.1 | 139. | 135. | 38.0 | 107. | 119. |

**Movement, Approach, & Intersection Results**

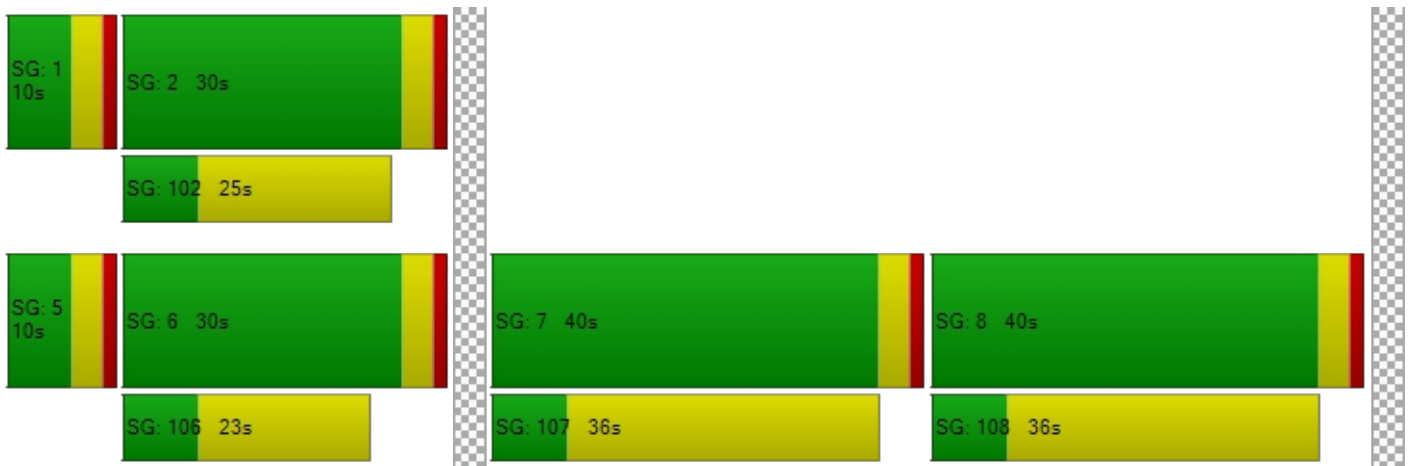
|                                 |       |      |      |       |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 61.9  | 57.0 | 57.0 | 61.1  | 0.00 | 61.5 | 69.5 | 4.54 | 4.52 | 64.2 | 3.67 | 3.89 |
| Movement LOS                    | E     | E    | E    | E     |      | E    | E    | A    | A    | E    | A    | A    |
| d_A, Approach Delay [s/veh]     | 60.31 |      |      | 61.36 |      |      | 5.02 |      |      | 4.77 |      |      |
| Approach LOS                    | E     |      |      | E     |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 6.75  |      |      |       |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |      |       |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.324 |      |      |       |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.001 | 1.962 | 2.848 | 2.838 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 600   | 600   | 433   | 433   |
| d_b, Bicycle Delay [s]                                     | 29.41 | 29.41 | 36.82 | 36.82 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.675 | 1.560 | 2.338 | 2.318 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 164.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.061 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Lambert Road |      |      | Ca Ca     |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound |      |      |
| Lane Configuration           |            |      |      |            |      |      |              |      |      |           |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes       |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Lambert Road |      |      | Ca Ca |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|-------|------|------|
|  |       |      |      |       |      |      |              |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 355   | 198  | 180  | 8     | 402  | 46   | 53           | 248  | 591  | 102   | 870  | 2    |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 355   | 198  | 180  | 8     | 402  | 46   | 53           | 248  | 591  | 102   | 870  | 2    |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 89    | 50   | 45   | 2     | 101  | 12   | 13           | 62   | 148  | 256   | 218  | 1    |
| Total Analysis Volume [veh/h]                                  | 355   | 198  | 180  | 8     | 402  | 46   | 53           | 248  | 591  | 102   | 870  | 2    |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Unsi | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 17   | 50   | 0    | 10   | 43   | 0    | 13   | 36   | 0    | 24   | 47   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 31   | 0    | 0    | 32   | 0    | 0    | 25   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L      | C     | L    | C    | C    | L    | C    | C    | L    | C    | C    |
|---|--------|-------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120    | 120   | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00   | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00   | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 13     | 29    | 1    | 17   | 17   | 5    | 54   | 54   | 20   | 69   | 69   |
| g / C, Green / Cycle                    | 0.11   | 0.24  | 0.01 | 0.14 | 0.14 | 0.04 | 0.45 | 0.45 | 0.17 | 0.57 | 0.57 |
| (v / s)_i Volume / Saturation Flow Rate | 0.20   | 0.05  | 0.00 | 0.12 | 0.12 | 0.03 | 0.07 | 0.31 | 0.29 | 0.15 | 0.16 |
| s, saturation flow rate [veh/h]         | 1800   | 3800  | 180  | 190  | 190  | 180  | 380  | 190  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 196    | 904   | 23   | 269  | 269  | 76   | 170  | 854  | 584  | 218  | 109  |
| d1, Uniform Delay [s]                   | 53.50  | 36.79 | 58.7 | 50.2 | 50.0 | 56.7 | 19.4 | 26.4 | 50.0 | 12.8 | 12.9 |
| k, delay calibration                    | 0.30   | 0.11  | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.15 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00   | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 377.26 | 0.12  | 8.95 | 7.04 | 6.16 | 10.8 | 0.18 | 4.59 | 339. | 0.29 | 0.63 |
| d3, Initial Queue Delay [s]             | 0.00   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00   | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00   | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |      |      |      |      |      |      |      |      |      |
|---------------------------------------|--------|--------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 1.81   | 0.22   | 0.35 | 0.84 | 0.82 | 0.70 | 0.15 | 0.69 | 1.75 | 0.26 | 0.28 |
| d, Delay for Lane Group [s/veh]       | 430.75 | 36.91  | 67.7 | 57.2 | 56.2 | 67.5 | 19.6 | 31.0 | 389. | 13.1 | 13.5 |
| Lane Group LOS                        | F      | D      | E    | E    | E    | E    | B    | C    | F    | B    | B    |
| Critical Lane Group                   | Yes    | No     | No   | Yes  | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 26.43  | 2.37   | 0.30 | 7.16 | 6.90 | 1.82 | 2.09 | 14.3 | 36.2 | 3.89 | 4.21 |
| 50th-Percentile Queue Length [ft/ln]  | 660.69 | 59.19  | 7.45 | 178. | 172. | 45.4 | 52.3 | 358. | 906. | 97.2 | 105. |
| 95th-Percentile Queue Length [veh/ln] | 41.75  | 4.26   | 0.54 | 11.5 | 11.2 | 3.27 | 3.77 | 20.5 | 56.6 | 7.00 | 7.58 |
| 95th-Percentile Queue Length [ft/ln]  | 1043.7 | 106.55 | 13.4 | 288. | 280. | 81.7 | 94.2 | 514. | 141  | 175. | 189. |

**Movement, Approach, & Intersection Results**

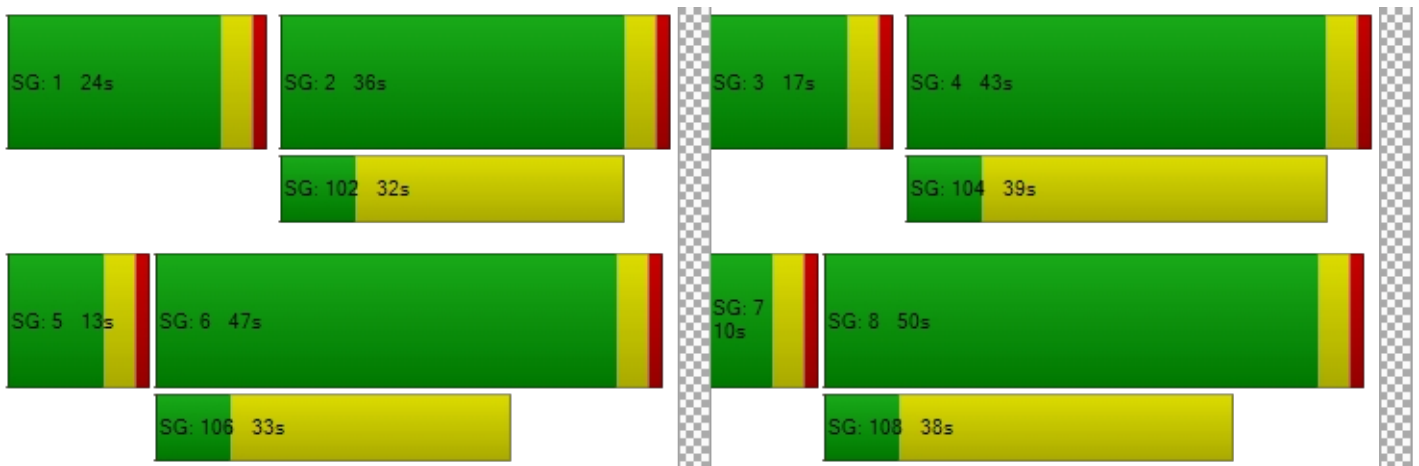
|                                 |        |      |      |       |      |      |       |      |      |        |      |      |
|---------------------------------|--------|------|------|-------|------|------|-------|------|------|--------|------|------|
| d_M, Delay for Movement [s/veh] | 430.   | 36.9 | 0.00 | 67.7  | 56.8 | 56.2 | 67.5  | 19.6 | 31.0 | 389.   | 13.2 | 13.5 |
| Movement LOS                    | F      | D    |      | E     | E    | E    | E     | B    | C    | F      | B    | B    |
| d_A, Approach Delay [s/veh]     | 289.74 |      |      | 56.93 |      |      | 30.03 |      |      | 216.21 |      |      |
| Approach LOS                    | F      |      |      | E     |      |      | C     |      |      | F      |      |      |
| d_I, Intersection Delay [s/veh] | 164.03 |      |      |       |      |      |       |      |      |        |      |      |
| Intersection LOS                | F      |      |      |       |      |      |       |      |      |        |      |      |
| Intersection V/C                | 1.061  |      |      |       |      |      |       |      |      |        |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.884 | 2.452 | 2.909 | 3.001 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 766   | 650   | 533   | 716   |
| d_b, Bicycle Delay [s]                                     | 22.83 | 27.35 | 32.28 | 24.72 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.016 | 1.936 | 2.050 | 2.601 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.4   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.582 |

**Intersection Setup**

| Name                         | Santa Fe Road |      |      | Santa Fe Road |      |      | Ca Ca     |      |      | Ca Ca     |      |      |
|------------------------------|---------------|------|------|---------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound    |      |      | Southbound    |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |               |      |      |               |      |      |           |      |      |           |      |      |
| Lane Configuration           |               |      |      |               |      |      |           |      |      |           |      |      |
| Turning Movement             | Left          | Thru | Righ | Left          | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0          | 12.0 | 12.0 | 12.0          | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0             | 0    | 0    | 0             | 0    | 0    | 1         | 0    | 0    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.          | 100. | 100. | 100.          | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0             | 0    | 0    | 0             | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00          | 0.00 | 0.00 | 0.00          | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00         |      |      | 30.00         |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00          |      |      | 0.00          |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No            |      |      | No            |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes           |      |      | Yes           |      |      | No        |      |      | Yes       |      |      |

**Volumes**

| Name   | Santa Fe Road |      |      | Santa Fe Road |      |      | Ca Ca |      |      | Ca Ca |      |      |
|--|---------------|------|------|---------------|------|------|-------|------|------|-------|------|------|
|  |               |      |      |               |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 5             | 1    | 1    | 0             | 0    | 25   | 15    | 434  | 8    | 7     | 190  | 5    |
| Base Volume Adjustment Factor                                  | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00          | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 5             | 1    | 1    | 0             | 0    | 25   | 15    | 434  | 8    | 7     | 190  | 5    |
| Peak Hour Factor   | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 1             | 0    | 0    | 0             | 0    | 6    | 4     | 109  | 2    | 2     | 477  | 1    |
| Total Analysis Volume [veh/h]                                  | 5             | 1    | 1    | 0             | 0    | 25   | 15    | 434  | 8    | 7     | 190  | 5    |
| Presence of On-Street Parking                                  | No            |      | No   | No            |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 0    | 4    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 0    | 6    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 0    | 30   | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 0.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 0.0  | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 35   | 0    | 0    | 0    | 35   | 10   | 75   | 0    | 10   | 75   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 0.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 24   | 0    | 0    | 0    | 0    | 0    | 17   | 0    | 0    | 19   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      |      | No   |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 0.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 0.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      |      | No   | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      |      | No   | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      |      | No   | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | C     | R     | L    | C    | C    | L    | C    | R    |
|---|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 3     | 3     | 2    | 103  | 103  | 1    | 102  | 102  |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.02 | 0.86 | 0.86 | 0.01 | 0.85 | 0.85 |
| (v / s)_i Volume / Saturation Flow Rate | 0.00  | 0.01  | 0.01 | 0.12 | 0.12 | 0.00 | 0.50 | 0.00 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 180  | 190  | 190  | 190  | 380  | 190  |
| c, Capacity [veh/h]                     | 103   | 54    | 36   | 163  | 163  | 21   | 323  | 161  |
| d1, Uniform Delay [s]                   | 56.81 | 57.35 | 58.0 | 1.32 | 1.32 | 58.9 | 2.67 | 1.33 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.27  | 5.91  | 7.41 | 0.17 | 0.17 | 9.39 | 0.80 | 0.00 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.07  | 0.46  | 0.41 | 0.14 | 0.13 | 0.34 | 0.59 | 0.00 |
| d, Delay for Lane Group [s/veh]       | 57.09 | 63.26 | 65.4 | 1.49 | 1.49 | 68.3 | 3.46 | 1.33 |
| Lane Group LOS                        | E     | E     | E    | A    | A    | E    | A    | A    |
| Critical Lane Group                   | No    | Yes   | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.22  | 0.84  | 0.52 | 0.52 | 0.51 | 0.27 | 4.31 | 0.01 |
| 50th-Percentile Queue Length [ft/ln]  | 5.38  | 20.92 | 13.1 | 12.9 | 12.8 | 6.63 | 107. | 0.30 |
| 95th-Percentile Queue Length [veh/ln] | 0.39  | 1.51  | 0.94 | 0.93 | 0.93 | 0.48 | 7.71 | 0.02 |
| 95th-Percentile Queue Length [ft/ln]  | 9.68  | 37.65 | 23.6 | 23.2 | 23.1 | 11.9 | 192. | 0.53 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 57.0  | 57.0 | 57.0  | 0.00 | 0.00 | 63.2 | 65.4 | 1.49 | 1.49 | 68.3 | 3.46 | 1.33 |
| Movement LOS                    | E     | E    | E     |      |      | E    | E    | A    | A    | E    | A    | A    |
| d_A, Approach Delay [s/veh]     | 57.09 |      | 63.26 |      | 3.59 |      | 3.69 |      |      |      |      |      |
| Approach LOS                    | E     |      | E     |      | A    |      | A    |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 4.45  |      |       |      |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |       |      |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.582 |      |       |      |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.50 | 49.50 | 0.00  | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.739 | 1.751 | 0.000 | 2.849 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 517   | 517   | 1184  | 1184  |
| d_b, Bicycle Delay [s]                                     | 33.00 | 33.00 | 10.00 | 10.00 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.571 | 1.560 | 1.937 | 3.144 |
| Bicycle LOS  | A     | A     | A     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 43.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.827 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T        |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | St Co |      |      | St Co |      |      | Birch Street |      |      | Birch Street |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  | 84    | 169  | 116  | 739   | 930  | 242  | 119          | 580  | 53   | 101          | 643  | 322  |
| Base Volume Input [veh/h]                                      | 84    | 169  | 116  | 739   | 930  | 242  | 119          | 580  | 53   | 101          | 643  | 322  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 84    | 169  | 116  | 739   | 930  | 242  | 119          | 580  | 53   | 101          | 643  | 322  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 21    | 42   | 29   | 185   | 233  | 61   | 30           | 145  | 13   | 25           | 161  | 81   |
| Total Analysis Volume [veh/h]                                  | 84    | 169  | 116  | 739   | 930  | 242  | 119          | 580  | 53   | 101          | 643  | 322  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 39   | 0    | 32   | 61   | 0    | 10   | 39   | 0    | 10   | 39   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 28   | 0    | 0    | 30   | 0    | 0    | 28   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | R    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6    | 36   | 36   | 27   | 57   | 57   | 6    | 35   | 35   | 6    | 35   | 35   |
| g / C, Green / Cycle                    | 0.05 | 0.30 | 0.30 | 0.23 | 0.48 | 0.48 | 0.05 | 0.29 | 0.29 | 0.05 | 0.29 | 0.29 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.04 | 0.06 | 0.21 | 0.49 | 0.13 | 0.03 | 0.15 | 0.03 | 0.03 | 0.17 | 0.17 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 190  | 190  | 350  | 380  | 190  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 164  | 113  | 565  | 793  | 907  | 907  | 172  | 111  | 559  | 169  | 111  | 557  |
| d1, Uniform Delay [s]                   | 55.8 | 31.0 | 31.5 | 45.4 | 31.3 | 18.8 | 56.1 | 35.2 | 30.7 | 55.9 | 36.0 | 36.0 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 2.45 | 0.06 | 0.18 | 5.62 | 21.0 | 0.16 | 4.89 | 1.72 | 0.34 | 3.36 | 2.18 | 4.32 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.51 | 0.15 | 0.21 | 0.93 | 1.03 | 0.27 | 0.69 | 0.52 | 0.09 | 0.60 | 0.58 | 0.58 |
| d, Delay for Lane Group [s/veh]       | 58.2 | 31.0 | 31.7 | 51.1 | 52.4 | 18.9 | 61.0 | 36.9 | 31.0 | 59.3 | 38.2 | 40.3 |
| Lane Group LOS                        | E    | C    | C    | D    | F    | B    | E    | D    | C    | E    | D    | D    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 1.30 | 1.82 | 2.56 | 11.3 | 15.2 | 4.07 | 1.89 | 7.34 | 1.18 | 1.58 | 8.34 | 8.69 |
| 50th-Percentile Queue Length [ft/ln]  | 32.4 | 45.6 | 64.0 | 283. | 381. | 101. | 47.2 | 183. | 29.4 | 39.4 | 208. | 217. |
| 95th-Percentile Queue Length [veh/ln] | 2.34 | 3.28 | 4.61 | 16.8 | 22.0 | 7.32 | 3.40 | 11.7 | 2.12 | 2.84 | 13.0 | 13.5 |
| 95th-Percentile Queue Length [ft/ln]  | 58.4 | 82.0 | 115. | 421. | 551. | 183. | 85.1 | 294. | 53.0 | 71.0 | 326. | 338. |

**Movement, Approach, & Intersection Results**

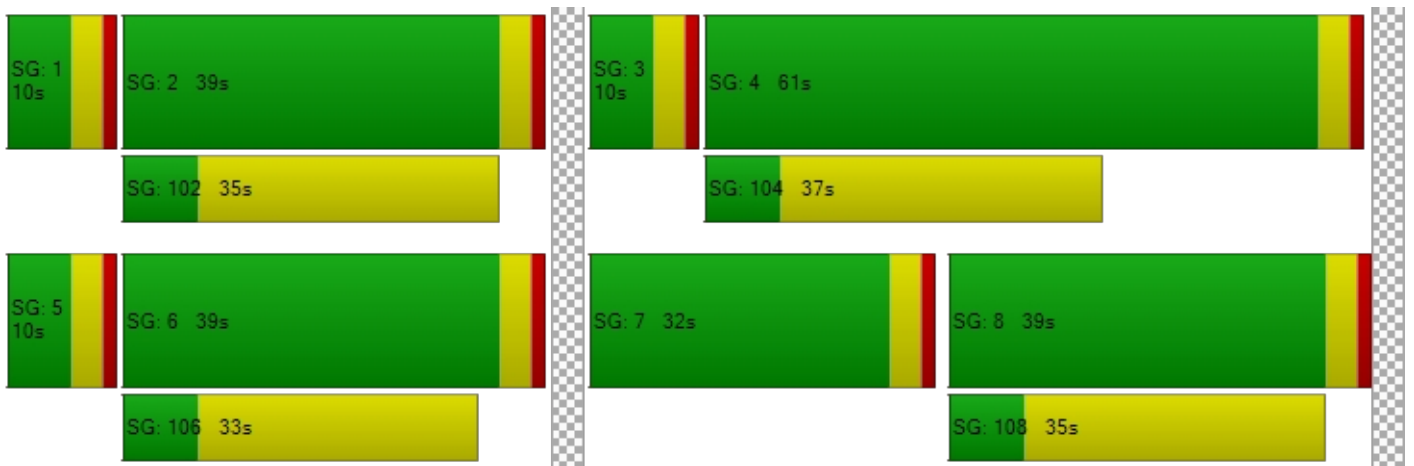
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 58.2  | 31.0 | 31.7 | 51.1  | 52.4 | 18.9 | 61.0  | 36.9 | 31.0 | 59.3  | 38.2 | 40.3 |
| Movement LOS                    | E     | C    | C    | D     | F    | B    | E     | D    | C    | E     | D    | D    |
| d_A, Approach Delay [s/veh]     | 37.46 |      |      | 47.67 |      |      | 40.38 |      |      | 40.89 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | D     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 43.65 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.827 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.50 | 49.50 | 49.50 | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.810 | 2.959 | 2.847 | 2.956 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 583   | 950   | 583   | 583   |
| d_b, Bicycle Delay [s]                                     | 30.10 | 16.54 | 30.10 | 30.10 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.864 | 3.136 | 2.180 | 2.439 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.755 |

**Intersection Setup**

| Name                         | S As       |      |      | S As       |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T        |      |      | T T          |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |



**Volumes**

| Name   | S As |      |      | S As |      |      | Birch Street |      |      | Birch Street |      |      |
|--|------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|  |      |      |      |      |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 272  | 7    | 351  | 60   | 32   | 10   | 5            | 106  | 356  | 396          | 877  | 11   |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 272  | 7    | 351  | 60   | 32   | 10   | 5            | 106  | 356  | 396          | 877  | 11   |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 68   | 2    | 88   | 15   | 8    | 3    | 1            | 265  | 89   | 99           | 219  | 3    |
| Total Analysis Volume [veh/h]                                  | 272  | 7    | 351  | 60   | 32   | 10   | 5            | 106  | 356  | 396          | 877  | 11   |
| Presence of On-Street Parking                                  | No   |      | No   | No   |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Ove  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 8    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      | 1,8  |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 6    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 30   | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 24   | 61   | 61   | 0    | 37   | 0    | 10   | 38   | 0    | 21   | 49   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 7    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 26   | 26   | 0    | 26   | 0    | 0    | 27   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   | No   |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   | No   |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   | No   |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L     | C     | L    | C    | C    | L    | C    | C    |
|---|------|------|------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 0.00 | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 12   | 22   | 43   | 6     | 6     | 1    | 69   | 69   | 17   | 85   | 85   |
| g / C, Green / Cycle                    | 0.10 | 0.18 | 0.35 | 0.05  | 0.05  | 0.01 | 0.58 | 0.58 | 0.14 | 0.71 | 0.71 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.00 | 0.18 | 0.03  | 0.02  | 0.00 | 0.39 | 0.36 | 0.11 | 0.23 | 0.23 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 1800  | 1900  | 180  | 190  | 190  | 350  | 190  | 190  |
| c, Capacity [veh/h]                     | 340  | 342  | 675  | 116   | 94    | 15   | 109  | 109  | 496  | 135  | 135  |
| d1, Uniform Delay [s]                   | 53.0 | 40.5 | 30.6 | 56.09 | 55.45 | 59.2 | 17.3 | 16.6 | 49.8 | 6.51 | 6.50 |
| k, delay calibration                    | 0.11 | 0.11 | 0.26 | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.34 | 0.02 | 1.49 | 3.51  | 3.30  | 13.0 | 3.21 | 2.65 | 3.00 | 0.65 | 0.65 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |       |       |      |      |      |      |      |      |
|---------------------------------------|------|------|------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.80 | 0.02 | 0.52 | 0.52  | 0.45  | 0.34 | 0.67 | 0.62 | 0.80 | 0.33 | 0.33 |
| d, Delay for Lane Group [s/veh]       | 57.3 | 40.5 | 32.1 | 59.61 | 58.75 | 72.2 | 20.5 | 19.3 | 52.8 | 7.16 | 7.15 |
| Lane Group LOS                        | E    | D    | C    | E     | E     | E    | C    | B    | D    | A    | A    |
| Critical Lane Group                   | No   | No   | Yes  | No    | No    | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 4.22 | 0.17 | 8.30 | 1.90  | 1.32  | 0.20 | 14.3 | 12.7 | 5.95 | 4.14 | 4.12 |
| 50th-Percentile Queue Length [ft/ln]  | 105. | 4.35 | 207. | 47.54 | 33.09 | 5.12 | 357. | 318. | 148. | 103. | 102. |
| 95th-Percentile Queue Length [veh/ln] | 7.59 | 0.31 | 13.0 | 3.42  | 2.38  | 0.37 | 20.5 | 18.5 | 9.95 | 7.45 | 7.41 |
| 95th-Percentile Queue Length [ft/ln]  | 189. | 7.84 | 325. | 85.58 | 59.56 | 9.21 | 512. | 464. | 248. | 186. | 185. |

**Movement, Approach, & Intersection Results**

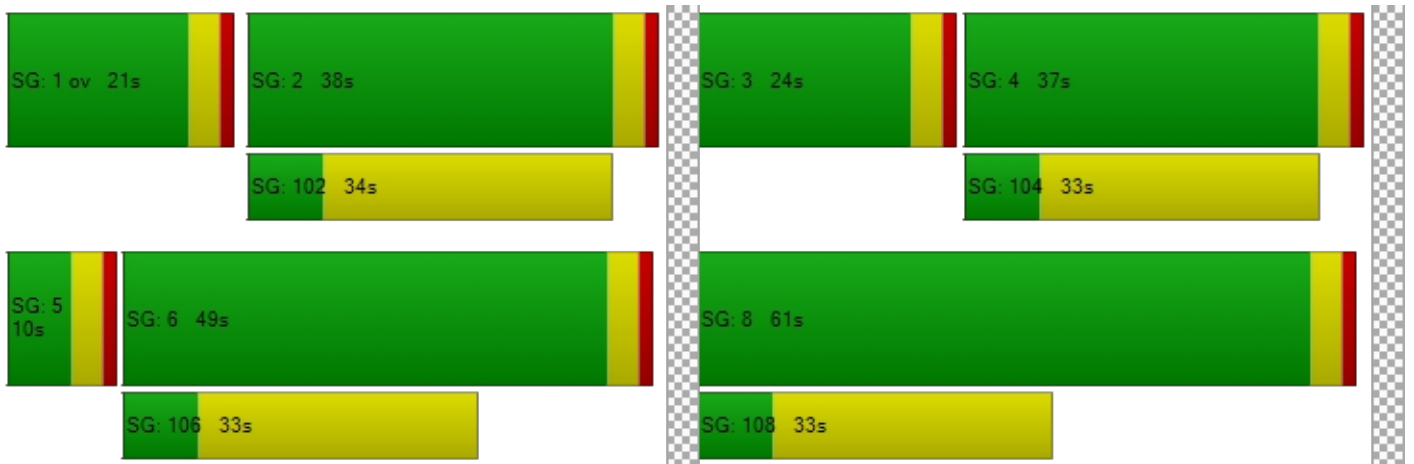
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.3  | 40.5 | 32.1 | 59.6  | 58.7 | 58.7 | 72.2  | 20.2 | 19.3 | 52.8  | 7.15 | 7.15 |
| Movement LOS                    | E     | D    | C    | E     | E    | E    | E     | C    | B    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 43.11 |      |      | 59.25 |      |      | 20.17 |      |      | 21.24 |      |      |
| Approach LOS                    | D     |      |      | E     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 25.93 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.755 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.696 | 1.995 | 2.817 | 3.000 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 950   | 550   | 567   | 750   |
| d_b, Bicycle Delay [s]                                     | 16.54 | 31.54 | 30.82 | 23.44 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.599 | 1.728 | 2.732 | 2.619 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.722 |

**Intersection Setup**

| Name                         | N As       |      |      | N As       |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           |            |      |      |            |      |      |              |      |      |              |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name   | N As |      |      | N As |      |      | Birch Street |      |      | Birch Street |      |      |
|--|------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|  |      |      |      |      |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 3    | 3    | 6    | 178  | 2    | 499  | 353          | 986  | 18   | 9            | 864  | 94   |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 3    | 3    | 6    | 178  | 2    | 499  | 353          | 986  | 18   | 9            | 864  | 94   |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 1    | 1    | 2    | 45   | 1    | 125  | 88           | 247  | 5    | 2            | 216  | 24   |
| Total Analysis Volume [veh/h]                                  | 3    | 3    | 6    | 178  | 2    | 499  | 353          | 986  | 18   | 9            | 864  | 94   |
| Presence of On-Street Parking                                  | No   |      | No   | No   |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Ove  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5  |      |      |      |      |      |      |
| Lead / Lag                   | -     | -     | -     | -     | -     | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30   | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34   | 44   | 37   | 0    | 39   | 32   | 0    |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23   | 0    | 18   | 0    | 0    | 21   | 0    |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |       | No    |       |       | No    |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |       | No    |       |       | No    | No   | No   | No   |      | No   | No   |      |
| Maximum Recall               |       | No    |       |       | No    | No   | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |       | No    |       |       | No    | No   | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | C    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 2    | 2    | 2    | 24   | 24   | 61   | 27   | 76   | 76   | 2    | 51   | 51   |
| g / C, Green / Cycle                    | 0.02 | 0.02 | 0.02 | 0.20 | 0.20 | 0.51 | 0.22 | 0.63 | 0.63 | 0.01 | 0.42 | 0.42 |
| (v / s)_i Volume / Saturation Flow Rate | 0.00 | 0.00 | 0.00 | 0.05 | 0.05 | 0.26 | 0.20 | 0.26 | 0.26 | 0.01 | 0.23 | 0.05 |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 180  | 190  | 180  | 190  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 67   | 33   | 33   | 362  | 362  | 969  | 405  | 120  | 120  | 25   | 160  | 804  |
| d1, Uniform Delay [s]                   | 58.0 | 58.0 | 58.1 | 40.3 | 40.3 | 19.5 | 44.8 | 10.9 | 10.9 | 58.6 | 25.8 | 21.0 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.49 | 0.16 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.28 | 1.17 | 2.58 | 0.35 | 0.35 | 1.91 | 8.24 | 1.07 | 1.06 | 8.46 | 1.29 | 0.30 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.05 | 0.09 | 0.18 | 0.25 | 0.25 | 0.51 | 0.87 | 0.42 | 0.42 | 0.36 | 0.54 | 0.12 |
| d, Delay for Lane Group [s/veh]       | 58.3 | 59.2 | 60.7 | 40.6 | 40.6 | 21.4 | 53.1 | 12.0 | 11.9 | 67.1 | 27.1 | 21.3 |
| Lane Group LOS                        | E    | E    | E    | D    | D    | C    | D    | B    | B    | E    | C    | C    |
| Critical Lane Group                   | No   | No   | Yes  | No   | No   | Yes  | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.09 | 0.10 | 0.20 | 2.28 | 2.29 | 9.62 | 11.0 | 6.72 | 6.67 | 0.33 | 9.43 | 1.68 |
| 50th-Percentile Queue Length [ft/ln]  | 2.37 | 2.51 | 5.09 | 57.0 | 57.1 | 240. | 275. | 168. | 166. | 8.26 | 235. | 42.0 |
| 95th-Percentile Queue Length [veh/ln] | 0.17 | 0.18 | 0.37 | 4.11 | 4.11 | 14.7 | 16.4 | 10.9 | 10.9 | 0.59 | 14.4 | 3.03 |
| 95th-Percentile Queue Length [ft/ln]  | 4.27 | 4.52 | 9.16 | 102. | 102. | 367. | 411. | 274. | 272. | 14.8 | 361. | 75.7 |



**Movement, Approach, & Intersection Results**

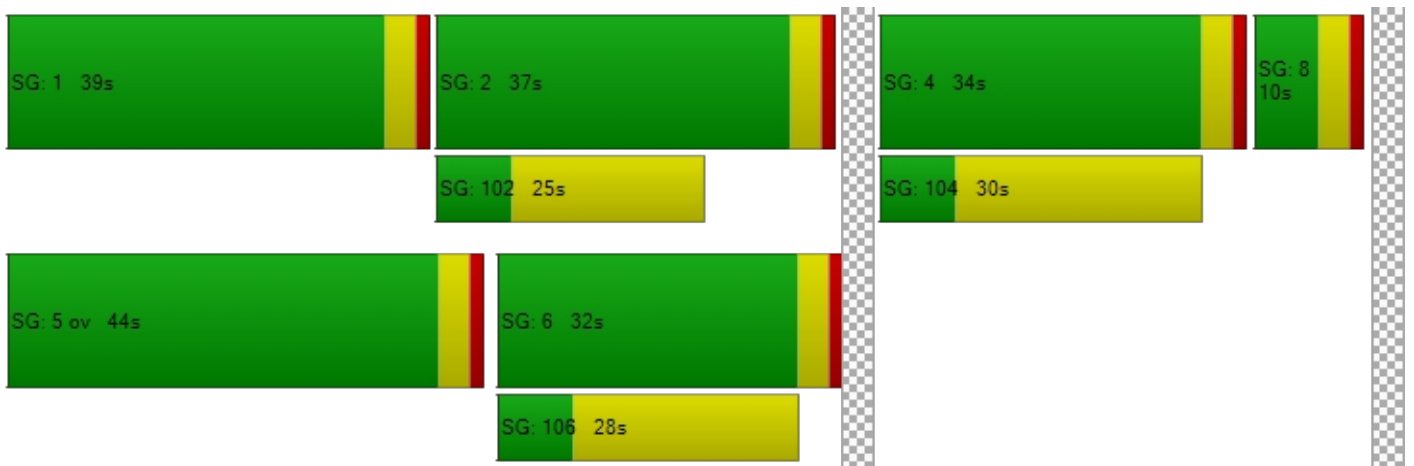
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 58.3  | 59.2 | 60.7 | 40.6  | 40.6 | 21.4 | 53.1  | 11.9 | 11.9 | 67.1  | 27.1 | 21.3 |
| Movement LOS                    | E     | E    | E    | D     | D    | C    | D     | B    | B    | E     | C    | C    |
| d_A, Approach Delay [s/veh]     | 59.74 |      |      | 26.54 |      |      | 22.68 |      |      | 26.95 |      |      |
| Approach LOS                    | E     |      |      | C     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 25.07 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.722 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.155 | 2.420 | 2.849 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 100   | 500   | 550   | 467   |
| d_b, Bicycle Delay [s]                                     | 54.17 | 33.76 | 31.55 | 35.28 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.579 | 2.680 | 2.679 | 2.357 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 36.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.601 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T          |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | Kr Bo |      |      | Kr Bo |      |      | Birch Street |      |      | Birch Street |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 148   | 256  | 101  | 490   | 113  | 216  | 56           | 660  | 382  | 69           | 522  | 245  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 148   | 256  | 101  | 490   | 113  | 216  | 56           | 660  | 382  | 69           | 522  | 245  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 37    | 64   | 25   | 123   | 284  | 54   | 14           | 165  | 96   | 17           | 131  | 61   |
| Total Analysis Volume [veh/h]                                  | 148   | 256  | 101  | 490   | 113  | 216  | 56           | 660  | 382  | 69           | 522  | 245  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 38   | 0    | 33   | 61   | 0    | 10   | 39   | 0    | 10   | 39   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 26   | 0    | 0    | 26   | 0    | 0    | 28   | 0    | 0    | 28   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L    | C    | R    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6    | 20   | 20   | 20   | 33   | 33   | 5    | 59   | 59   | 6    | 60   | 60   |
| g / C, Green / Cycle                    | 0.05 | 0.17 | 0.17 | 0.16 | 0.28 | 0.28 | 0.04 | 0.49 | 0.49 | 0.05 | 0.50 | 0.50 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.06 | 0.06 | 0.14 | 0.24 | 0.23 | 0.03 | 0.17 | 0.20 | 0.04 | 0.14 | 0.13 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 380  | 190  | 180  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 178  | 630  | 315  | 570  | 105  | 528  | 78   | 185  | 927  | 90   | 188  | 940  |
| d1, Uniform Delay [s]                   | 56.4 | 44.6 | 44.5 | 48.9 | 41.1 | 40.7 | 56.7 | 19.0 | 19.6 | 56.3 | 17.7 | 17.5 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 9.68 | 0.38 | 0.72 | 3.92 | 2.18 | 3.58 | 11.8 | 0.53 | 1.35 | 12.8 | 0.37 | 0.67 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.83 | 0.38 | 0.37 | 0.86 | 0.86 | 0.84 | 0.72 | 0.36 | 0.41 | 0.77 | 0.28 | 0.26 |
| d, Delay for Lane Group [s/veh]       | 66.1 | 44.9 | 45.2 | 52.8 | 43.3 | 44.3 | 68.6 | 19.5 | 21.0 | 69.2 | 18.1 | 18.2 |
| Lane Group LOS                        | E    | D    | D    | D    | D    | D    | E    | B    | C    | E    | B    | B    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.46 | 3.24 | 3.15 | 7.44 | 12.9 | 12.7 | 1.93 | 5.79 | 7.12 | 2.39 | 4.31 | 4.09 |
| 50th-Percentile Queue Length [ft/ln]  | 61.5 | 80.9 | 78.7 | 186. | 324. | 317. | 48.3 | 144. | 177. | 59.6 | 107. | 102. |
| 95th-Percentile Queue Length [veh/ln] | 4.43 | 5.83 | 5.67 | 11.9 | 18.8 | 18.5 | 3.48 | 9.74 | 11.4 | 4.30 | 7.72 | 7.37 |
| 95th-Percentile Queue Length [ft/ln]  | 110. | 145. | 141. | 297. | 471. | 464. | 87.0 | 243. | 287. | 107. | 192. | 184. |

**Movement, Approach, & Intersection Results**

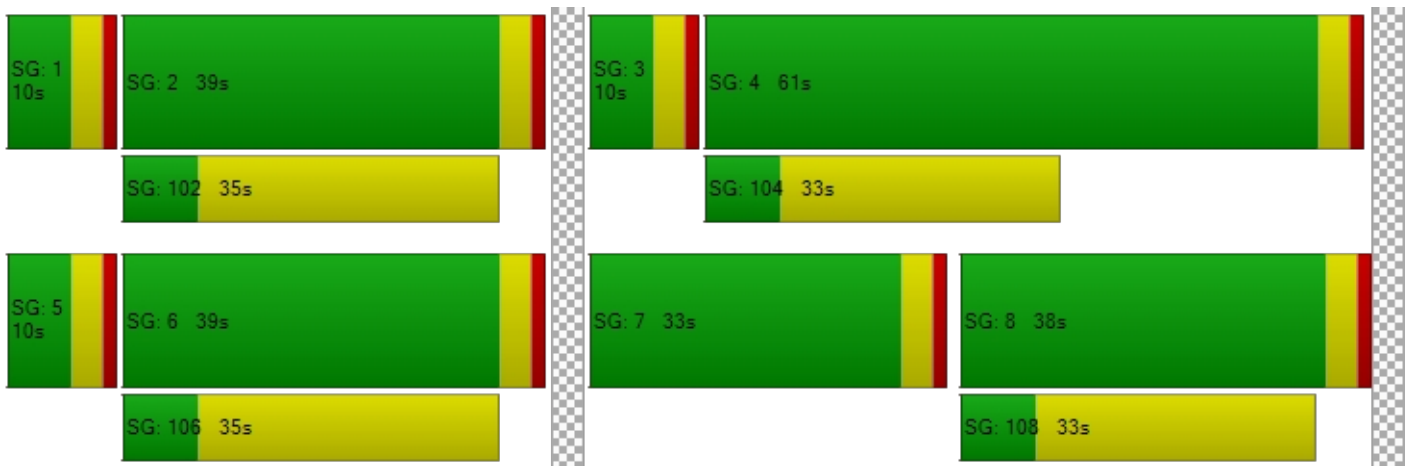
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 66.1  | 45.0 | 45.2 | 52.8  | 43.5 | 44.3 | 68.6  | 19.5 | 21.0 | 69.2  | 18.1 | 18.2 |
| Movement LOS                    | E     | D    | D    | D     | D    | D    | E     | B    | C    | E     | B    | B    |
| d_A, Approach Delay [s/veh]     | 51.24 |      |      | 46.09 |      |      | 22.58 |      |      | 22.38 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 36.03 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.601 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.994 | 3.031 | 2.789 | 2.806 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 567   | 950   | 583   | 583   |
| d_b, Bicycle Delay [s]                                     | 30.83 | 16.55 | 30.12 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.837 | 2.572 | 2.465 | 2.249 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 122.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.914 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Birch Street |      |      | Rose Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T        |      |      | T T T      |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1          | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00       |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes        |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Birch Street |      |      | Rose Drive |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|------------|------|------|
|  |       |      |      |       |      |      |              |      |      |            |      |      |
| Base Volume Input [veh/h]                                      | 149   | 259  | 26   | 879   | 946  | 300  | 79           | 520  | 149  | 44         | 430  | 391  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 149   | 259  | 26   | 879   | 946  | 300  | 79           | 520  | 149  | 44         | 430  | 391  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 37    | 65   | 7    | 220   | 237  | 75   | 20           | 130  | 37   | 11         | 108  | 98   |
| Total Analysis Volume [veh/h]                                  | 149   | 259  | 26   | 879   | 946  | 300  | 79           | 520  | 149  | 44         | 430  | 391  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No         |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 17   | 38   | 0    | 36   | 57   | 0    | 10   | 36   | 0    | 10   | 36   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 27   | 0    | 0    | 25   | 0    | 0    | 25   | 0    | 0    | 25   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L    | C    | C    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 12   | 23   | 23   | 32   | 43   | 43   | 6    | 45   | 45   | 5    | 44   | 44   |
| g / C, Green / Cycle                    | 0.10 | 0.19 | 0.19 | 0.27 | 0.36 | 0.36 | 0.05 | 0.37 | 0.37 | 0.04 | 0.36 | 0.36 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.08 | 0.07 | 0.49 | 0.33 | 0.33 | 0.02 | 0.18 | 0.17 | 0.02 | 0.11 | 0.21 |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 350  | 190  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 177  | 359  | 359  | 480  | 679  | 679  | 165  | 706  | 706  | 71   | 138  | 692  |
| d1, Uniform Delay [s]                   | 53.2 | 42.7 | 42.6 | 44.0 | 36.8 | 36.8 | 55.7 | 28.9 | 28.5 | 56.7 | 27.3 | 30.5 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.50 | 0.27 | 0.27 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 10.2 | 0.72 | 0.70 | 382. | 11.8 | 11.8 | 2.14 | 2.43 | 2.12 | 8.59 | 0.59 | 3.33 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.84 | 0.40 | 0.39 | 1.83 | 0.92 | 0.92 | 0.48 | 0.49 | 0.46 | 0.62 | 0.31 | 0.57 |
| d, Delay for Lane Group [s/veh]       | 63.5 | 43.4 | 43.3 | 426. | 48.7 | 48.7 | 57.8 | 31.4 | 30.6 | 65.3 | 27.9 | 33.9 |
| Lane Group LOS                        | E    | D    | D    | F    | D    | D    | E    | C    | C    | E    | C    | C    |
| Critical Lane Group                   | No   | Yes  | No   | Yes  | No   | No   | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 4.92 | 3.84 | 3.75 | 65.1 | 19.4 | 19.4 | 1.22 | 8.13 | 7.41 | 1.48 | 4.55 | 9.65 |
| 50th-Percentile Queue Length [ft/ln]  | 123. | 96.0 | 93.6 | 162  | 485. | 485. | 30.4 | 203. | 185. | 37.1 | 113. | 241. |
| 95th-Percentile Queue Length [veh/ln] | 8.56 | 6.91 | 6.75 | 101. | 26.6 | 26.6 | 2.19 | 12.8 | 11.8 | 2.67 | 8.05 | 14.7 |
| 95th-Percentile Queue Length [ft/ln]  | 214. | 172. | 168. | 253  | 666. | 666. | 54.7 | 320. | 296. | 66.7 | 201. | 368. |

**Movement, Approach, & Intersection Results**

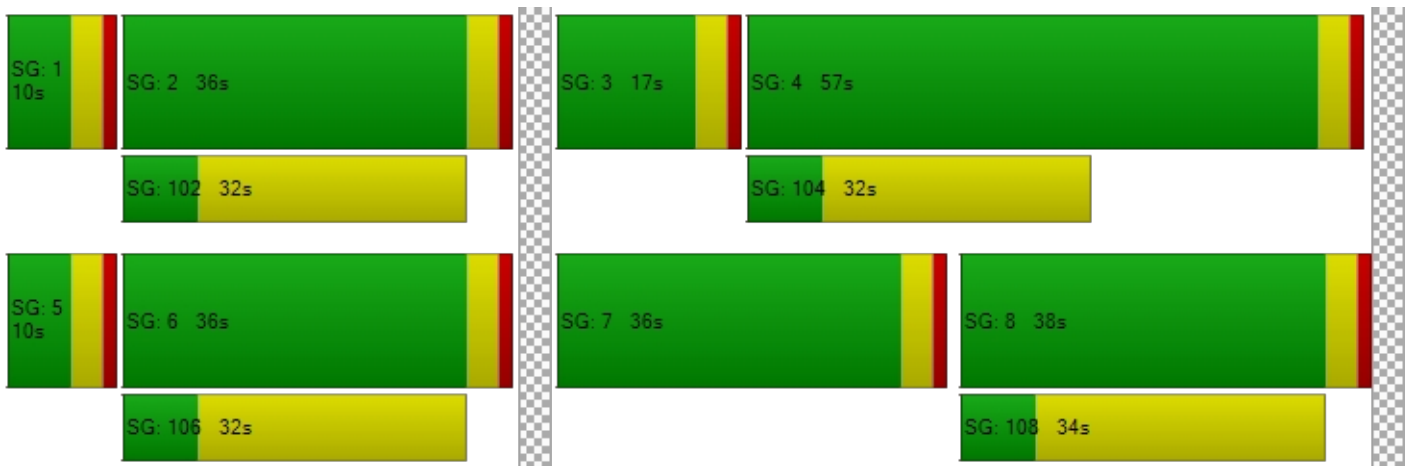
|                                 |        |      |      |        |      |      |       |      |      |       |      |      |
|---------------------------------|--------|------|------|--------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 63.5   | 43.3 | 43.3 | 426.   | 48.7 | 48.7 | 57.8  | 31.1 | 30.6 | 65.3  | 27.9 | 33.9 |
| Movement LOS                    | E      | D    | D    | F      | D    | D    | E     | C    | C    | E     | C    | C    |
| d_A, Approach Delay [s/veh]     | 50.29  |      |      | 205.15 |      |      | 33.88 |      |      | 32.56 |      |      |
| Approach LOS                    | D      |      |      | F      |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 122.55 |      |      |        |      |      |       |      |      |       |      |      |
| Intersection LOS                | F      |      |      |        |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.914  |      |      |        |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.620 | 2.870 | 2.731 | 2.839 |
| Crosswalk LOS  | B     | C     | B     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 567   | 883   | 533   | 533   |
| d_b, Bicycle Delay [s]                                     | 30.83 | 18.72 | 32.28 | 32.28 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.918 | 3.313 | 2.177 | 2.273 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 9.0   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.871 |

**Intersection Setup**

| Name                         | Rose Drive |      |       | Rose Drive |      |       | Vesuvius Drive |      |       | Vesuvius Drive |      |       |
|------------------------------|------------|------|-------|------------|------|-------|----------------|------|-------|----------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound      |      |       | Westbound      |      |       |
| Approach                     | Northbound |      |       | Southbound |      |       | Eastbound      |      |       | Westbound      |      |       |
| Lane Configuration           |            |      |       |            |      |       |                |      |       |                |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left           | Thru | Right | Left           | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 1     | 1          | 0    | 1     | 0              | 0    | 0     | 1              | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.           | 100. | 100.  | 100.           | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0              | 0    | 0     | 0              | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00          |      |       | 30.00          |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00           |      |       | 0.00           |      |       |
| Curb Present                 | No         |      |       | No         |      |       | No             |      |       | No             |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes            |      |       | Yes            |      |       |

**Volumes**

| Name   | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|--|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|  |            |      |      |            |      |      |                |      |      |                |      |      |
| Base Volume Input [veh/h]                                      | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 3          | 202  | 4    | 2          | 374  | 3    | 2              | 0    | 10   | 9              | 0    | 3    |
| Total Analysis Volume [veh/h]                                  | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No             |      | No   | No             |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 6    | 0    | 0    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 91   | 0    | 0    | 91   | 0    | 0    | 29   | 0    | 0    | 29   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 7    | 0    | 0    | 14   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 107  | 107  | 107  | 107  | 107  | 107  | 5     | 5     | 5     |
| g / C, Green / Cycle                    | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.04  | 0.04  | 0.04  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.22 | 0.22 | 0.00 | 0.79 | 0.01 | 0.03  | 0.02  | 0.01  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 180  | 1800  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 901  | 169  | 169  | 157  | 169  | 160  | 108   | 62    | 76    |
| d1, Uniform Delay [s]                   | 0.69 | 0.88 | 0.87 | 0.69 | 3.22 | 0.69 | 56.70 | 56.32 | 55.60 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.02 | 0.34 | 0.34 | 0.00 | 6.96 | 0.01 | 2.73  | 7.70  | 1.04  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |       |       |       |
|---------------------------------------|------|------|------|------|------|------|-------|-------|-------|
| X, volume / capacity                  | 0.01 | 0.24 | 0.24 | 0.00 | 0.88 | 0.01 | 0.43  | 0.56  | 0.17  |
| d, Delay for Lane Group [s/veh]       | 0.71 | 1.22 | 1.21 | 0.69 | 10.1 | 0.70 | 59.43 | 64.01 | 56.64 |
| Lane Group LOS                        | A    | A    | A    | A    | B    | A    | E     | E     | E     |
| Critical Lane Group                   | No   | No   | No   | No   | Yes  | No   | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.01 | 0.52 | 0.51 | 0.01 | 8.00 | 0.01 | 1.49  | 1.17  | 0.40  |
| 50th-Percentile Queue Length [ft/ln]  | 0.34 | 12.9 | 12.8 | 0.15 | 199. | 0.27 | 37.16 | 29.30 | 10.07 |
| 95th-Percentile Queue Length [veh/ln] | 0.02 | 0.93 | 0.92 | 0.01 | 12.6 | 0.02 | 2.68  | 2.11  | 0.73  |
| 95th-Percentile Queue Length [ft/ln]  | 0.61 | 23.2 | 23.0 | 0.27 | 315. | 0.49 | 66.89 | 52.74 | 18.13 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 0.71  | 1.22 | 1.21  | 0.69 | 10.1  | 0.70 | 59.4  | 59.4 | 59.4 | 64.0 | 56.6 | 56.6 |
| Movement LOS                    | A     | A    | A     | A    | B     | A    | E     | E    | E    | E    | E    | E    |
| d_A, Approach Delay [s/veh]     | 1.21  |      | 10.07 |      | 59.43 |      | 62.02 |      |      |      |      |      |
| Approach LOS                    | A     |      | B     |      | E     |      | E     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 9.01  |      |       |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | A     |      |       |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.871 |      |       |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.48 | 49.48 | 49.48 | 49.48 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.780 | 2.783 | 1.778 | 1.985 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1451  | 1451  | 417   | 417   |
| d_b, Bicycle Delay [s]                                     | 4.53  | 4.53  | 37.58 | 37.58 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.248 | 4.054 | 1.637 | 1.639 |
| Bicycle LOS  | B     | D     | A     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 15.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.656 |

**Intersection Setup**

| Name                         |          |      |      | SR-57      |      |      | Im Hi      |      |      | Im Hi     |      |      |           |  |  |
|------------------------------|----------|------|------|------------|------|------|------------|------|------|-----------|------|------|-----------|--|--|
|                              | Approach |      |      | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |  |  |
| Lane Configuration           |          |      |      | ⇐⇐⇐        |      |      | ⇐⇐⇐        |      |      | ⇐⇐⇐       |      |      | ⇐⇐⇐       |  |  |
| Turning Movement             | Left     | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ |           |  |  |
| Lane Width [ft]              | 12.0     | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |           |  |  |
| No. of Lanes in Entry Pocket | 0        | 0    | 0    | 1          | 0    | 1    | 0          | 0    | 1    | 0         | 0    | 1    |           |  |  |
| Entry Pocket Length [ft]     | 100.     | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. |           |  |  |
| No. of Lanes in Exit Pocket  | 0        | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    |           |  |  |
| Exit Pocket Length [ft]      | 0.00     | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |           |  |  |
| Speed [mph]                  | 30.00    |      |      | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      |           |  |  |
| Grade [%]                    | 0.00     |      |      | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      |           |  |  |
| Curb Present                 |          |      |      | No         |      |      | No         |      |      | No        |      |      |           |  |  |
| Crosswalk                    | No       |      |      | Yes        |      |      | No         |      |      | No        |      |      |           |  |  |

**Volumes**

| Name   |      |      |      | SR-57 |      |      | Im Hi |      |      | Im Hi |      |      |
|--|------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |      |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 0    | 0    | 0    | 653   | 0    | 551  | 0     | 167  | 792  | 0     | 213  | 233  |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 0    | 0    | 0    | 653   | 0    | 551  | 0     | 167  | 792  | 0     | 213  | 233  |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 0    | 0    | 0    | 163   | 0    | 138  | 0     | 419  | 198  | 0     | 534  | 58   |
| Total Analysis Volume [veh/h]                                  | 0    | 0    | 0    | 653   | 0    | 551  | 0     | 167  | 792  | 0     | 213  | 233  |
| Presence of On-Street Parking                                  |      |      |      | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Split | Per  | Split | Per  | Per  | Unsi | Per  | Per  | Unsi |
|------------------------------|------|------|------|-------|------|-------|------|------|------|------|------|------|
| Signal Group                 | 0    | 0    | 0    | 7     | 0    | 0     | 0    | 2    | 0    | 0    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |       |      |       |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | Lea   | -    | -     | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0    | 0    | 0    | 6     | 0    | 0     | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0    | 0    | 0    | 30    | 0    | 0     | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 0.0  | 0.0  | 1.0   | 0.0  | 0.0   | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 0    | 0    | 64    | 0    | 0     | 0    | 26   | 0    | 0    | 26   | 0    |
| Vehicle Extension [s]        | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 15   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| Maximum Recall               |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| Pedestrian Recall            |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | C    | C    |
|---|------|------|------|------|------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 24   | 24   | 24   | 58   | 58   |
| g / C, Green / Cycle                    | 0.27 | 0.27 | 0.27 | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.22 | 0.22 | 0.21 | 0.29 | 0.37 |
| s, saturation flow rate [veh/h]         | 180  | 180  | 190  | 5700 | 5700 |
| c, Capacity [veh/h]                     | 485  | 485  | 512  | 3656 | 3656 |
| d1, Uniform Delay [s]                   | 30.8 | 30.8 | 30.3 | 8.18 | 9.24 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.66 | 3.66 | 2.68 | 0.42 | 0.69 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |        |        |
|---------------------------------------|------|------|------|--------|--------|
| X, volume / capacity                  | 0.83 | 0.83 | 0.78 | 0.46   | 0.58   |
| d, Delay for Lane Group [s/veh]       | 34.5 | 34.5 | 33.0 | 8.59   | 9.93   |
| Lane Group LOS                        | C    | C    | C    | A      | A      |
| Critical Lane Group                   | Yes  | No   | No   | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 8.42 | 8.42 | 8.19 | 4.95   | 7.16   |
| 50th-Percentile Queue Length [ft/ln]  | 210. | 210. | 204. | 123.69 | 179.06 |
| 95th-Percentile Queue Length [veh/ln] | 13.1 | 13.1 | 12.8 | 8.60   | 11.55  |
| 95th-Percentile Queue Length [ft/ln]  | 329. | 329. | 322. | 214.89 | 288.79 |

**Movement, Approach, & Intersection Results**

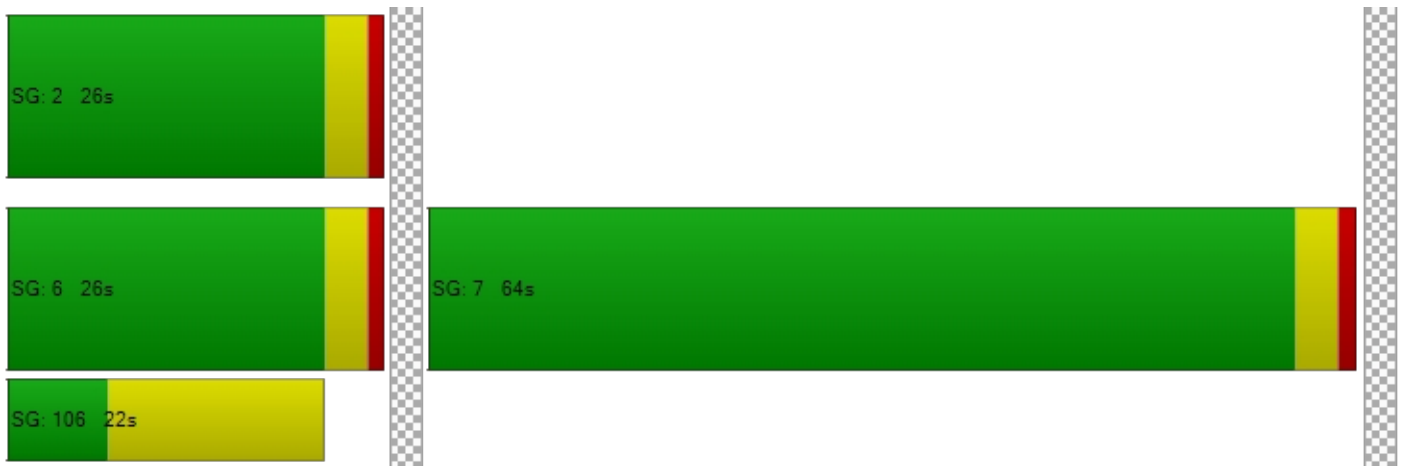
|                                 |       |      |      |       |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 34.5  | 0.00 | 33.4 | 0.00 | 8.59 | 0.00 | 0.00 | 9.93 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C    |      | A    |      |      | A    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 34.02 |      |      | 8.59 |      |      | 9.93 |      |      |
| Approach LOS                    | A     |      |      | C     |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 15.27 |      |      |       |      |      |      |      |      |      |      |      |
| Intersection LOS                | B     |      |      |       |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.656 |      |      |       |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 0.000 | 2.424 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                     | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection                | 4.132 | 3.546 | 2.480 | 2.734 |
| Bicycle LOS  | D     | D     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 29.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.678 |

**Intersection Setup**

| Name                         | SR-57      |      |      | Sh Ce      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | ⇐⇐⇐+       |      |      | ⇐⇐         |      |      | ⇐   ⇐     |      |      | ⇐         |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 0          | 0    | 1    | 1         | 0    | 1    | 0         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | No        |      |      | No        |      |      |

**Volumes**

| Name   | SR-57 |      |      | Sh Ce |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| Base Volume Input [veh/h]                                      | 109   | 36   | 908  | 0     | 0    | 92   | 113   | 155  | 606  | 0     | 170  | 16   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 109   | 36   | 908  | 0     | 0    | 92   | 113   | 155  | 606  | 0     | 170  | 16   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 275   | 9    | 227  | 0     | 0    | 23   | 28    | 388  | 152  | 0     | 425  | 4    |
| Total Analysis Volume [veh/h]                                  | 109   | 36   | 908  | 0     | 0    | 92   | 113   | 155  | 606  | 0     | 170  | 16   |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Per  | Split | Prot | Per  | Unsi | Per  | Per  | Per  |
|------------------------------|-------|-------|-------|-------|------|-------|------|------|------|------|------|------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0    | 4     | 5    | 2    | 0    | 0    | 6    | 0    |
| Auxiliary Signal Groups      |       |       |       |       |      |       |      |      |      |      |      |      |
| Lead / Lag                   | -     | -     | -     | -     | -    | -     | Lea  | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0    | 6     | 6    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0    | 30    | 30   | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0  | 3.0   | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0  | 1.0   | 1.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0     | 53    | 0     | 0     | 0    | 10    | 12   | 42   | 0    | 0    | 30   | 0    |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0  | 3.0   | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0    | 0     | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0    | 0     | 0    | 22   | 0    | 0    | 19   | 0    |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |       | No    |       |       |      | No    |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0  | 2.0   | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0  | 2.0   | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |       | No    |       |       |      | No    | No   | No   |      |      | No   |      |
| Maximum Recall               |       | No    |       |       |      | No    | No   | No   |      |      | No   |      |
| Pedestrian Recall            |       | No    |       |       |      | No    | No   | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | R     | L     | C     | C     | C     |
|---|------|------|------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 105  | 105  | 105  | 105   | 105   | 105   | 105   | 105   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 37   | 37   | 37   | 6     | 8     | 51    | 39    | 39    |
| g / C, Green / Cycle                    | 0.35 | 0.35 | 0.35 | 0.05  | 0.08  | 0.48  | 0.37  | 0.37  |
| (v / s)_i Volume / Saturation Flow Rate | 0.29 | 0.29 | 0.27 | 0.02  | 0.06  | 0.27  | 0.23  | 0.23  |
| s, saturation flow rate [veh/h]         | 350  | 180  | 190  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 122  | 631  | 666  | 206   | 138   | 2743  | 2088  | 696   |
| d1, Uniform Delay [s]                   | 31.1 | 31.1 | 30.5 | 48.19 | 47.79 | 19.43 | 27.26 | 27.26 |
| k, delay calibration                    | 0.11 | 0.18 | 0.16 | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.43 | 4.47 | 2.86 | 1.52  | 11.00 | 0.85  | 1.37  | 4.06  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |       |        |        |        |        |
|---------------------------------------|------|------|------|-------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.82 | 0.82 | 0.78 | 0.45  | 0.82   | 0.57   | 0.62   | 0.62   |
| d, Delay for Lane Group [s/veh]       | 32.5 | 35.6 | 33.3 | 49.71 | 58.79  | 20.28  | 28.64  | 31.32  |
| Lane Group LOS                        | C    | D    | C    | D     | E      | C      | C      | C      |
| Critical Lane Group                   | No   | Yes  | No   | Yes   | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 11.6 | 12.4 | 11.9 | 1.21  | 3.32   | 8.91   | 8.90   | 9.42   |
| 50th-Percentile Queue Length [ft/ln]  | 289. | 312. | 299. | 30.23 | 83.12  | 222.75 | 222.55 | 235.53 |
| 95th-Percentile Queue Length [veh/ln] | 17.1 | 18.2 | 17.6 | 2.18  | 5.98   | 13.81  | 13.80  | 14.45  |
| 95th-Percentile Queue Length [ft/ln]  | 429. | 456. | 441. | 54.42 | 149.61 | 345.13 | 344.88 | 361.37 |

**Movement, Approach, & Intersection Results**

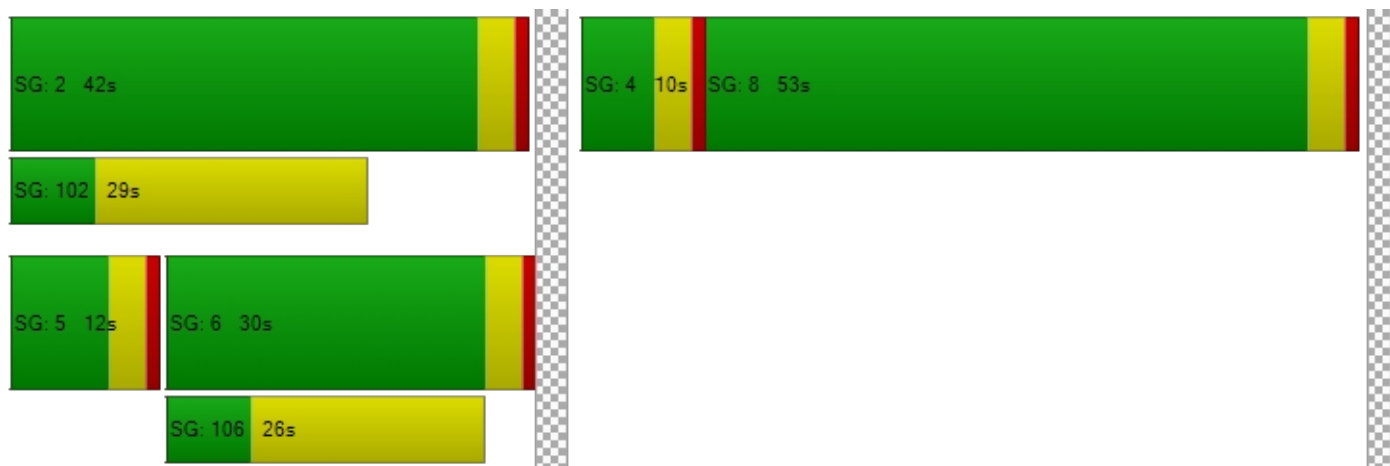
|                                 |       |      |       |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 32.7  | 35.6 | 34.3  | 0.00 | 0.00  | 49.7 | 58.7  | 20.2 | 0.00 | 0.00 | 29.2 | 31.3 |
| Movement LOS                    | C     | D    | C     |      |       | D    | E     | C    |      |      | C    | C    |
| d_A, Approach Delay [s/veh]     | 33.54 |      | 49.71 |      | 22.89 |      | 29.31 |      |      |      |      |      |
| Approach LOS                    | C     |      | D     |      | C     |      | C     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 29.28 |      |       |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | C     |      |       |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.678 |      |       |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 42.11 | 42.11 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.706 | 2.031 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 933   | 114   | 723   | 495   |
| d_b, Bicycle Delay [s]                                     | 14.96 | 46.70 | 21.40 | 29.75 |
| I_b,int, Bicycle LOS Score for Intersection                | 4.931 | 1.560 | 2.475 | 2.267 |
| Bicycle LOS  | E     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 31.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.816 |

**Intersection Setup**

| Name                         | As Ro      |      |      | As Ro      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |            |      |      |            |      |      |           |      |      |           |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T     |      |      | T T T     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name   | As Ro |      |      | As Ro |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 164   | 232  | 80   | 181   | 372  | 177  | 227   | 211  | 112  | 101   | 184  | 108  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 164   | 232  | 80   | 181   | 372  | 177  | 227   | 211  | 112  | 101   | 184  | 108  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 41    | 58   | 20   | 45    | 93   | 44   | 57    | 528  | 28   | 25    | 461  | 27   |
| Total Analysis Volume [veh/h]                                  | 164   | 232  | 80   | 181   | 372  | 177  | 227   | 211  | 112  | 101   | 184  | 108  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 39   | 0    | 12   | 41   | 0    | 19   | 48   | 0    | 11   | 40   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 28   | 0    | 0    | 29   | 0    | 0    | 26   | 0    | 0    | 25   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | L    | C    | C    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6    | 23   | 23   | 8    | 24   | 24   | 15   | 57   | 57   | 7    | 49   | 49   |
| g / C, Green / Cycle                    | 0.05 | 0.21 | 0.21 | 0.07 | 0.22 | 0.22 | 0.14 | 0.52 | 0.52 | 0.06 | 0.44 | 0.44 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.08 | 0.08 | 0.05 | 0.20 | 0.09 | 0.13 | 0.39 | 0.40 | 0.06 | 0.25 | 0.27 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 350  | 190  | 190  | 180  | 380  | 190  | 180  | 570  | 190  |
| c, Capacity [veh/h]                     | 194  | 390  | 390  | 244  | 417  | 417  | 246  | 195  | 979  | 116  | 252  | 842  |
| d1, Uniform Delay [s]                   | 51.5 | 37.9 | 37.7 | 50.2 | 41.6 | 36.9 | 46.9 | 21.0 | 21.5 | 51.0 | 22.8 | 23.3 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.15 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 9.71 | 0.70 | 0.63 | 4.43 | 9.05 | 0.68 | 13.5 | 2.66 | 5.96 | 17.4 | 0.94 | 3.24 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.85 | 0.41 | 0.39 | 0.74 | 0.89 | 0.42 | 0.92 | 0.75 | 0.77 | 0.87 | 0.57 | 0.61 |
| d, Delay for Lane Group [s/veh]       | 61.2 | 38.6 | 38.3 | 54.6 | 50.7 | 37.6 | 60.4 | 23.7 | 27.4 | 68.5 | 23.8 | 26.5 |
| Lane Group LOS                        | E    | D    | D    | D    | D    | D    | E    | C    | C    | E    | C    | C    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.50 | 3.85 | 3.58 | 2.59 | 10.7 | 4.17 | 7.03 | 14.9 | 16.6 | 3.32 | 9.31 | 10.6 |
| 50th-Percentile Queue Length [ft/ln]  | 62.4 | 96.2 | 89.3 | 64.7 | 268. | 104. | 175. | 372. | 416. | 82.8 | 232. | 265. |
| 95th-Percentile Queue Length [veh/ln] | 4.50 | 6.93 | 6.44 | 4.66 | 16.1 | 7.51 | 11.3 | 21.2 | 23.3 | 5.97 | 14.3 | 15.9 |
| 95th-Percentile Queue Length [ft/ln]  | 112. | 173. | 160. | 116. | 403. | 187. | 284. | 530. | 583. | 149. | 357. | 398. |

**Movement, Approach, & Intersection Results**

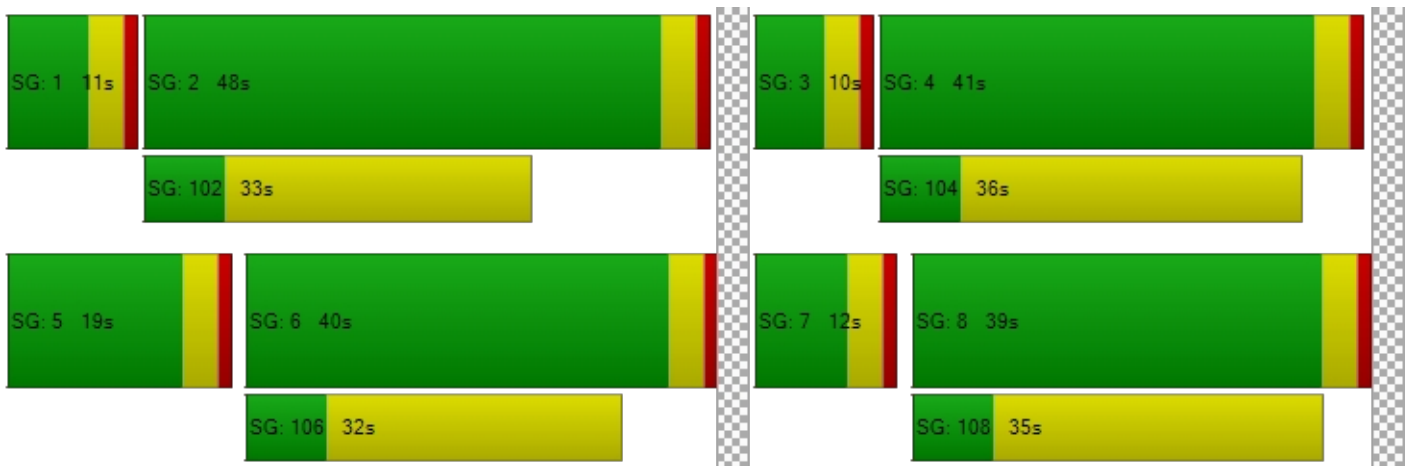
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 61.2  | 38.6 | 38.3 | 54.6  | 50.7 | 37.6 | 60.4  | 24.8 | 27.4 | 68.5  | 24.4 | 26.5 |
| Movement LOS                    | E     | D    | D    | D     | D    | D    | E     | C    | C    | E     | C    | C    |
| d_A, Approach Delay [s/veh]     | 46.37 |      |      | 48.54 |      |      | 28.27 |      |      | 26.70 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 31.81 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.816 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 44.58 | 44.58 | 44.58 | 44.58 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.516 | 2.673 | 3.300 | 3.274 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 636   | 672   | 800   | 654   |
| d_b, Bicycle Delay [s]                                     | 25.59 | 24.25 | 19.82 | 24.91 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.952 | 2.764 | 2.907 | 2.406 |
| Bicycle LOS  | A     | C     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.703 |

**Intersection Setup**

| Name                         | PI Av      |      |      | Castlegate Lane |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|-----------------|------|------|-----------|------|------|-----------|------|------|
| Approach                     | Northbound |      |      | Southbound      |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           |            |      |      |                 |      |      |           |      |      |           |      |      |
| Turning Movement             | Left       | Thru | Righ | Left            | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0            | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1               | 0    | 0    | 1         | 0    | 1    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.            | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0               | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00            | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00           |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00            |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No              |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes             |      |      | No        |      |      | Yes       |      |      |



**Volumes**

| Name   | Pl Av |      |      | Castlegate Lane |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-----------------|------|------|-------|------|------|-------|------|------|
| Base Volume Input [veh/h]                                      | 199   | 13   | 159  | 27              | 31   | 15   | 14    | 207  | 398  | 191   | 170  | 35   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00            | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 199   | 13   | 159  | 27              | 31   | 15   | 14    | 207  | 398  | 191   | 170  | 35   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 50    | 3    | 40   | 7               | 8    | 4    | 4     | 519  | 100  | 48    | 426  | 9    |
| Total Analysis Volume [veh/h]                                  | 199   | 13   | 159  | 27              | 31   | 15   | 14    | 207  | 398  | 191   | 170  | 35   |
| Presence of On-Street Parking                                  | No    |      | No   | No              |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |       |       |       |       |       |       |      |      |      |      |      |      |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0     | 26    | 0     | 0     | 10    | 0     | 10   | 32   | 0    | 22   | 44   | 0    |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0    | 21   | 0    | 0    | 14   | 0    |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |       | No    |       |       | No    |       |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |       | No    |       |       | No    |       | No   | No   |      | No   | No   |      |
| Maximum Recall               |       | No    |       |       | No    |       | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |       | No    |       |       | No    |       | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L     | C     | L    | C    | R    | L    | C    | C    |
|---|------|------|------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90    | 90    | 90   | 90   | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 10   | 10   | 10   | 5     | 5     | 2    | 47   | 47   | 12   | 57   | 57   |
| g / C, Green / Cycle                    | 0.11 | 0.11 | 0.11 | 0.06  | 0.06  | 0.02 | 0.53 | 0.53 | 0.13 | 0.63 | 0.63 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06 | 0.06 | 0.08 | 0.02  | 0.02  | 0.01 | 0.36 | 0.21 | 0.11 | 0.30 | 0.31 |
| s, saturation flow rate [veh/h]         | 180  | 180  | 190  | 1800  | 1900  | 180  | 570  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 203  | 203  | 214  | 103   | 109   | 38   | 298  | 996  | 231  | 240  | 120  |
| d1, Uniform Delay [s]                   | 37.7 | 37.7 | 38.7 | 40.69 | 41.08 | 43.5 | 16.0 | 12.9 | 38.3 | 8.75 | 8.91 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 2.06 | 2.09 | 5.01 | 1.34  | 2.61  | 5.86 | 1.36 | 1.20 | 7.30 | 0.68 | 1.46 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |       |       |      |      |      |      |      |      |
|---------------------------------------|------|------|------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.52 | 0.52 | 0.74 | 0.26  | 0.42  | 0.37 | 0.70 | 0.40 | 0.83 | 0.48 | 0.50 |
| d, Delay for Lane Group [s/veh]       | 39.7 | 39.8 | 43.7 | 42.03 | 43.68 | 49.4 | 17.4 | 14.1 | 45.6 | 9.43 | 10.3 |
| Lane Group LOS                        | D    | D    | D    | D     | D     | D    | B    | B    | D    | A    | B    |
| Critical Lane Group                   | No   | No   | Yes  | No    | Yes   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.29 | 2.30 | 3.65 | 0.61  | 1.06  | 0.37 | 10.1 | 4.86 | 4.52 | 5.38 | 5.94 |
| 50th-Percentile Queue Length [ft/ln]  | 57.1 | 57.5 | 91.3 | 15.16 | 26.39 | 9.18 | 254. | 121. | 112. | 134. | 148. |
| 95th-Percentile Queue Length [veh/ln] | 4.12 | 4.14 | 6.57 | 1.09  | 1.90  | 0.66 | 15.4 | 8.47 | 8.00 | 9.18 | 9.94 |
| 95th-Percentile Queue Length [ft/ln]  | 102. | 103. | 164. | 27.29 | 47.50 | 16.5 | 384. | 211. | 200. | 229. | 248. |

**Movement, Approach, & Intersection Results**

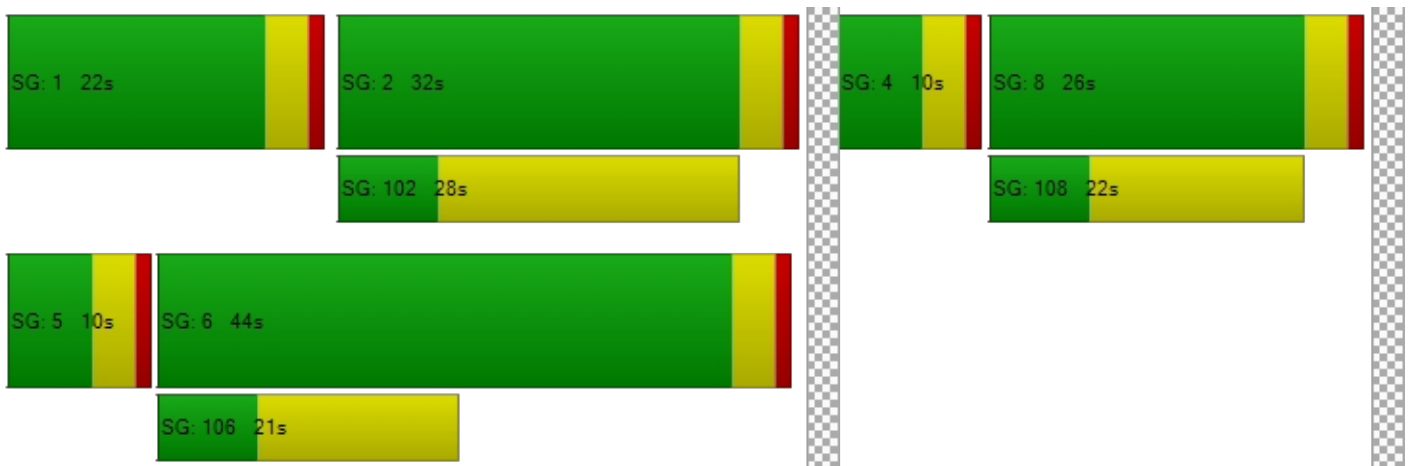
|                                 |       |      |      |       |      |      |       |      |       |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|-------|------|------|------|
| d_M, Delay for Movement [s/veh] | 39.7  | 39.8 | 43.7 | 42.0  | 43.6 | 43.6 | 49.4  | 17.4 | 14.1  | 45.6 | 9.74 | 10.3 |
| Movement LOS                    | D     | D    | D    | D     | D    | D    | D     | B    | B     | D    | A    | B    |
| d_A, Approach Delay [s/veh]     | 41.49 |      |      | 43.07 |      |      | 17.07 |      | 13.30 |      |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | B     |      | B     |      |      |      |
| d_I, Intersection Delay [s/veh] | 17.83 |      |      |       |      |      |       |      |       |      |      |      |
| Intersection LOS                | B     |      |      |       |      |      |       |      |       |      |      |      |
| Intersection V/C                | 0.703 |      |      |       |      |      |       |      |       |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.72 | 34.72 | 0.00  | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.372 | 1.984 | 0.000 | 3.177 |
| Crosswalk LOS  | B     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 488   | 133   | 622   | 888   |
| d_b, Bicycle Delay [s]                                     | 25.73 | 39.24 | 21.40 | 13.92 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.172 | 1.680 | 2.929 | 2.621 |
| Bicycle LOS  | B     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.687 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | T O R      |      |      | O L R      |      |      | T O R     |      |      | T O R     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name   | Kr Bo |      |      | Kr Bo |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 192   | 277  | 94   | 352   | 726  | 123  | 148   | 145  | 263  | 77    | 124  | 96   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 192   | 277  | 94   | 352   | 726  | 123  | 148   | 145  | 263  | 77    | 124  | 96   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 48    | 69   | 24   | 88    | 182  | 31   | 37    | 364  | 66   | 19    | 312  | 24   |
| Total Analysis Volume [veh/h]                                  | 192   | 277  | 94   | 352   | 726  | 123  | 148   | 145  | 263  | 77    | 124  | 96   |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 11   | 30   | 0    | 16   | 35   | 0    | 10   | 39   | 0    | 10   | 39   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 19   | 0    | 0    | 19   | 0    | 0    | 26   | 0    | 0    | 28   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | L    | C    | C    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 95   | 95   | 95   | 95   | 95   | 95   | 95   | 95   | 95   | 95   | 95   | 95   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 7    | 17   | 17   | 11   | 21   | 21   | 6    | 45   | 45   | 5    | 45   | 45   |
| g / C, Green / Cycle                    | 0.07 | 0.18 | 0.18 | 0.12 | 0.22 | 0.22 | 0.06 | 0.48 | 0.48 | 0.06 | 0.47 | 0.47 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.10 | 0.09 | 0.10 | 0.19 | 0.06 | 0.04 | 0.30 | 0.30 | 0.02 | 0.23 | 0.24 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 350  | 380  | 190  | 350  | 380  | 190  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 261  | 338  | 338  | 425  | 854  | 427  | 220  | 181  | 905  | 196  | 178  | 892  |
| d1, Uniform Delay [s]                   | 43.1 | 35.7 | 35.4 | 40.8 | 35.3 | 30.5 | 43.6 | 18.7 | 18.5 | 43.3 | 17.4 | 17.5 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.03 | 1.50 | 1.28 | 4.21 | 2.48 | 0.37 | 3.55 | 1.73 | 3.21 | 1.28 | 1.01 | 2.05 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.74 | 0.57 | 0.53 | 0.83 | 0.85 | 0.29 | 0.67 | 0.64 | 0.62 | 0.39 | 0.50 | 0.51 |
| d, Delay for Lane Group [s/veh]       | 47.1 | 37.2 | 36.7 | 45.0 | 37.8 | 30.9 | 47.1 | 20.4 | 21.7 | 44.6 | 18.5 | 19.6 |
| Lane Group LOS                        | D    | D    | D    | D    | D    | C    | D    | C    | C    | D    | B    | B    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.34 | 4.17 | 3.83 | 4.23 | 8.19 | 2.36 | 1.80 | 9.48 | 9.54 | 0.90 | 6.72 | 7.09 |
| 50th-Percentile Queue Length [ft/ln]  | 58.4 | 104. | 95.8 | 105. | 204. | 58.9 | 44.9 | 236. | 238. | 22.5 | 168. | 177. |
| 95th-Percentile Queue Length [veh/ln] | 4.21 | 7.51 | 6.90 | 7.60 | 12.8 | 4.24 | 3.24 | 14.5 | 14.6 | 1.63 | 10.9 | 11.4 |
| 95th-Percentile Queue Length [ft/ln]  | 105. | 187. | 172. | 190. | 322. | 106. | 80.9 | 363. | 365. | 40.6 | 274. | 286. |



**Movement, Approach, & Intersection Results**

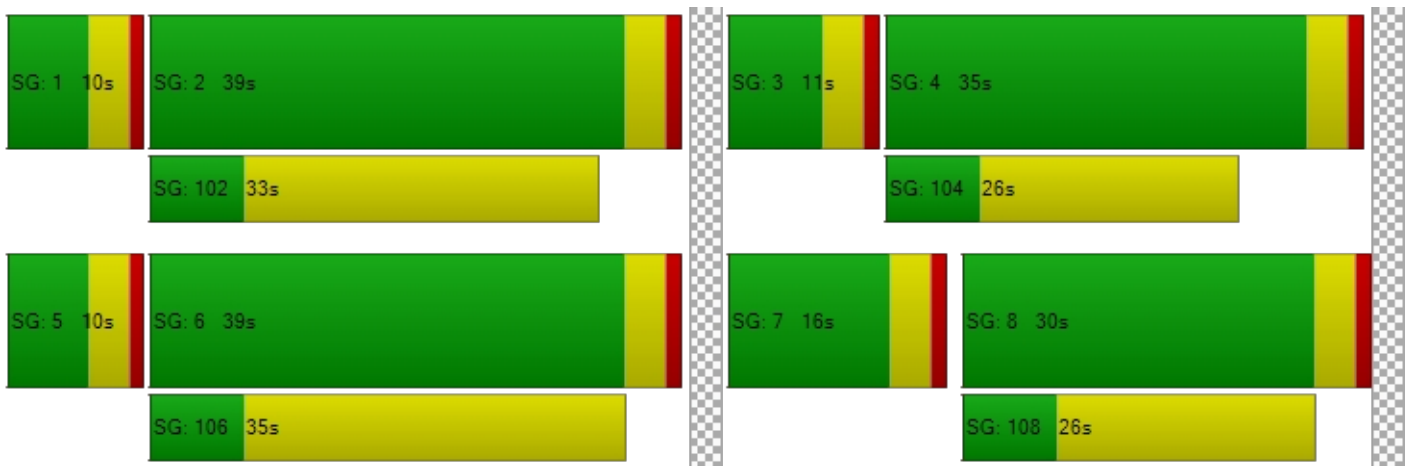
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 47.1  | 37.1 | 36.7 | 45.0  | 37.8 | 30.9 | 47.1  | 20.7 | 21.7 | 44.6  | 18.8 | 19.6 |
| Movement LOS                    | D     | D    | D    | D     | D    | C    | D     | C    | C    | D     | B    | B    |
| d_A, Approach Delay [s/veh]     | 40.47 |      |      | 39.24 |      |      | 22.96 |      |      | 20.27 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 28.03 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.687 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 37.18 | 37.18 | 37.18 | 37.18 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.720 | 2.836 | 3.146 | 3.133 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 547   | 652   | 736   | 736   |
| d_b, Bicycle Delay [s]                                     | 25.09 | 21.59 | 18.98 | 18.98 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.024 | 2.550 | 2.585 | 2.342 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.622 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram] |      |      | [Diagram] |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 1    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 144   | 214  | 129  | 311   | 347  | 247  | 218   | 110  | 99   | 127   | 172  | 163  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 144   | 214  | 129  | 311   | 347  | 247  | 218   | 110  | 99   | 127   | 172  | 163  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 36    | 54   | 32   | 78    | 87   | 62   | 55    | 277  | 25   | 32    | 430  | 41   |
| Total Analysis Volume [veh/h]                                  | 144   | 214  | 129  | 311   | 347  | 247  | 218   | 110  | 99   | 127   | 172  | 163  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 11   | 46   | 0    | 17   | 52   | 0    | 13   | 42   | 0    | 10   | 39   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 35   | 0    | 0    | 37   | 0    | 0    | 26   | 0    | 0    | 28   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | R    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 7    | 12   | 12   | 12   | 18   | 18   | 9    | 68   | 68   | 6    | 65   | 65   |
| g / C, Green / Cycle                    | 0.06 | 0.11 | 0.11 | 0.11 | 0.16 | 0.16 | 0.08 | 0.59 | 0.59 | 0.05 | 0.57 | 0.57 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.06 | 0.07 | 0.09 | 0.09 | 0.13 | 0.06 | 0.19 | 0.05 | 0.04 | 0.30 | 0.09 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 380  | 190  | 350  | 570  | 190  | 350  | 570  | 190  |
| c, Capacity [veh/h]                     | 203  | 412  | 206  | 371  | 594  | 297  | 276  | 338  | 112  | 185  | 323  | 107  |
| d1, Uniform Delay [s]                   | 53.2 | 48.4 | 49.0 | 50.4 | 45.0 | 47.0 | 52.0 | 11.7 | 10.0 | 53.5 | 15.4 | 11.7 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.49 | 1.02 | 3.11 | 5.05 | 0.91 | 5.98 | 5.01 | 0.26 | 0.15 | 4.44 | 0.63 | 0.30 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.71 | 0.52 | 0.63 | 0.84 | 0.58 | 0.83 | 0.79 | 0.33 | 0.09 | 0.69 | 0.53 | 0.15 |
| d, Delay for Lane Group [s/veh]       | 57.7 | 49.4 | 52.1 | 55.5 | 45.9 | 53.0 | 57.0 | 12.0 | 10.1 | 57.9 | 16.0 | 12.0 |
| Lane Group LOS                        | E    | D    | D    | E    | D    | D    | E    | B    | B    | E    | B    | B    |
| Critical Lane Group                   | Yes  | No   | No   | No   | No   | Yes  | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.17 | 2.96 | 3.72 | 4.65 | 4.67 | 7.33 | 3.28 | 4.69 | 1.10 | 1.92 | 9.14 | 2.03 |
| 50th-Percentile Queue Length [ft/ln]  | 54.2 | 74.0 | 93.0 | 116. | 116. | 183. | 81.9 | 117. | 27.5 | 47.9 | 228. | 50.8 |
| 95th-Percentile Queue Length [veh/ln] | 3.91 | 5.33 | 6.70 | 8.18 | 8.22 | 11.7 | 5.90 | 8.24 | 1.98 | 3.45 | 14.1 | 3.66 |
| 95th-Percentile Queue Length [ft/ln]  | 97.7 | 133. | 167. | 204. | 205. | 294. | 147. | 206. | 49.5 | 86.3 | 352. | 91.5 |

**Movement, Approach, & Intersection Results**

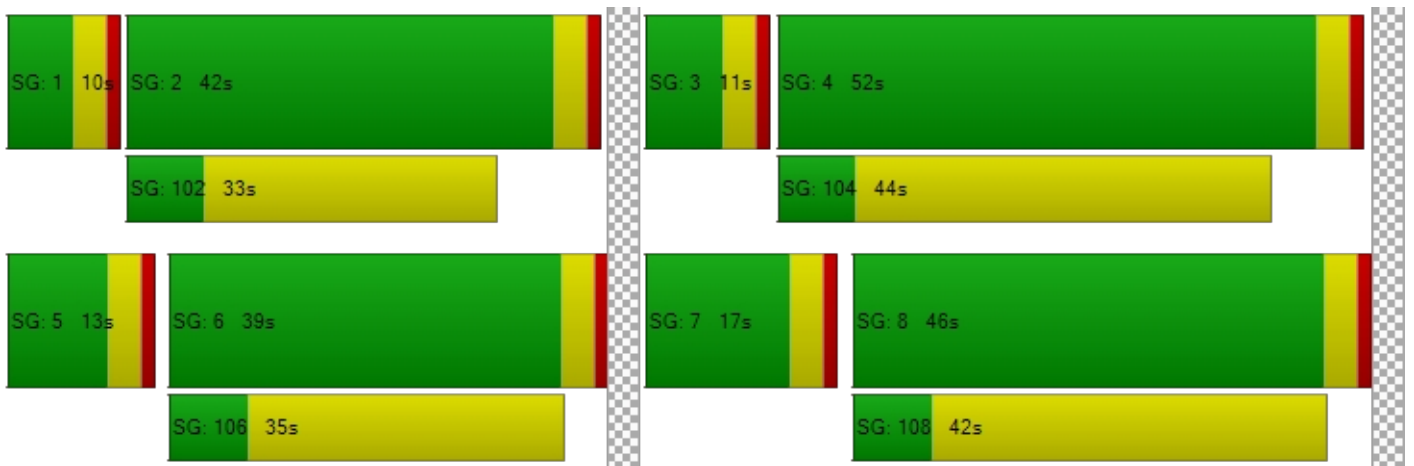
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.7  | 49.4 | 52.1 | 55.5  | 45.9 | 53.0 | 57.0  | 12.0 | 10.1 | 57.9  | 16.0 | 12.0 |
| Movement LOS                    | E     | D    | D    | E     | D    | D    | E     | B    | B    | E     | B    | B    |
| d_A, Approach Delay [s/veh]     | 52.64 |      |      | 51.19 |      |      | 18.82 |      |      | 18.37 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | B     |      |      | B     |      |      |
| d_I, Intersection Delay [s/veh] | 28.12 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.622 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.753 | 2.815 | 3.244 | 3.246 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 730   | 834   | 661   | 608   |
| d_b, Bicycle Delay [s]                                     | 23.19 | 19.53 | 25.80 | 27.84 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.961 | 2.306 | 2.342 | 2.665 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 246.4 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.822 |

**Intersection Setup**

| Name                         | Rose Drive |      |       | Rose Drive |      |       | Im Hi     |      |       | Im Hi     |      |       |
|------------------------------|------------|------|-------|------------|------|-------|-----------|------|-------|-----------|------|-------|
| Approach                     | Northbound |      |       | Southbound |      |       | Eastbound |      |       | Westbound |      |       |
| Lane Configuration           | L L L      |      |       | L L L      |      |       | L L L     |      |       | L L L     |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left      | Thru | Right | Left      | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 1          | 0    | 1     | 1         | 0    | 0     | 1         | 0    | 1     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.      | 100. | 100.  | 100.      | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0         | 0    | 0     | 0         | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00     |      |       | 30.00     |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00      |      |       | 0.00      |      |       |
| Curb Present                 | No         |      |       | No         |      |       | No        |      |       | No        |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes       |      |       | Yes       |      |       |

**Volumes**

| Name   | Rose Drive |      |      | Rose Drive |      |      | Im Hi |      |      | Im Hi |      |      |
|--|------------|------|------|------------|------|------|-------|------|------|-------|------|------|
|  |            |      |      |            |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 267        | 240  | 152  | 944        | 590  | 37   | 44    | 134  | 249  | 280   | 156  | 598  |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 267        | 240  | 152  | 944        | 590  | 37   | 44    | 134  | 249  | 280   | 156  | 598  |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 67         | 60   | 38   | 236        | 148  | 9    | 11    | 336  | 62   | 70    | 392  | 150  |
| Total Analysis Volume [veh/h]                                  | 267        | 240  | 152  | 944        | 590  | 37   | 44    | 134  | 249  | 280   | 156  | 598  |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 15   | 53   | 0    | 12   | 50   | 0    | 10   | 45   | 0    | 10   | 45   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 42   | 0    | 0    | 36   | 0    | 0    | 34   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | C    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 11   | 25   | 25   | 8    | 22   | 22   | 5    | 65   | 65   | 6    | 67   | 67   |
| g / C, Green / Cycle                    | 0.09 | 0.20 | 0.20 | 0.07 | 0.18 | 0.18 | 0.04 | 0.54 | 0.54 | 0.05 | 0.56 | 0.56 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.06 | 0.08 | 0.27 | 0.16 | 0.02 | 0.02 | 0.28 | 0.27 | 0.08 | 0.28 | 0.31 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 380  | 190  | 180  | 380  | 190  | 350  | 570  | 190  |
| c, Capacity [veh/h]                     | 323  | 779  | 389  | 236  | 684  | 342  | 71   | 206  | 103  | 178  | 316  | 105  |
| d1, Uniform Delay [s]                   | 53.5 | 40.5 | 41.2 | 55.9 | 47.7 | 41.1 | 56.7 | 17.4 | 17.2 | 56.9 | 16.3 | 17.3 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.40 | 0.22 | 0.64 | 135  | 3.37 | 0.14 | 8.59 | 0.94 | 1.76 | 265. | 0.56 | 2.21 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.83 | 0.31 | 0.39 | 4.00 | 0.86 | 0.11 | 0.62 | 0.52 | 0.50 | 1.58 | 0.50 | 0.57 |
| d, Delay for Lane Group [s/veh]       | 58.9 | 40.7 | 41.8 | 141  | 51.1 | 41.3 | 65.3 | 18.3 | 18.9 | 322. | 16.9 | 19.5 |
| Lane Group LOS                        | E    | D    | D    | F    | D    | D    | E    | B    | B    | F    | B    | B    |
| Critical Lane Group                   | No   | No   | Yes  | Yes  | No   | No   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 4.20 | 3.05 | 3.97 | 47.9 | 8.86 | 0.94 | 1.48 | 9.47 | 9.33 | 9.23 | 8.77 | 11.0 |
| 50th-Percentile Queue Length [ft/ln]  | 105. | 76.2 | 99.3 | 119  | 221. | 23.4 | 37.1 | 236. | 233. | 230. | 219. | 276. |
| 95th-Percentile Queue Length [veh/ln] | 7.56 | 5.49 | 7.15 | 72.4 | 13.7 | 1.68 | 2.67 | 14.5 | 14.3 | 15.8 | 13.6 | 16.5 |
| 95th-Percentile Queue Length [ft/ln]  | 189. | 137. | 178. | 181  | 343. | 42.1 | 66.7 | 363. | 358. | 395. | 340. | 412. |

**Movement, Approach, & Intersection Results**

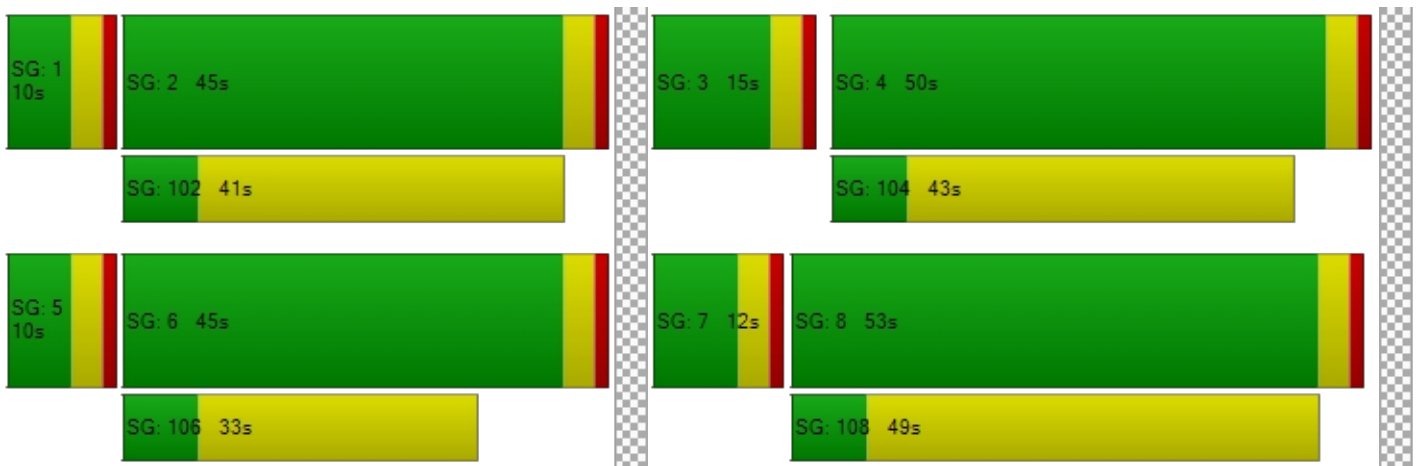
|                                 |        |      |      |        |      |      |       |      |      |       |      |      |
|---------------------------------|--------|------|------|--------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 58.9   | 40.7 | 41.8 | 141    | 51.1 | 41.3 | 65.3  | 18.4 | 18.9 | 322.  | 16.9 | 19.5 |
| Movement LOS                    | E      | D    | D    | F      | D    | D    | E     | B    | B    | F     | B    | B    |
| d_A, Approach Delay [s/veh]     | 48.38  |      |      | 867.70 |      |      | 19.82 |      |      | 52.51 |      |      |
| Approach LOS                    | D      |      |      | F      |      |      | B     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 246.40 |      |      |        |      |      |       |      |      |       |      |      |
| Intersection LOS                | F      |      |      |        |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.822  |      |      |        |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.855 | 2.949 | 3.097 | 3.393 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 816   | 766   | 683   | 683   |
| d_b, Bicycle Delay [s]                                     | 21.02 | 22.83 | 26.02 | 26.02 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.103 | 2.856 | 2.461 | 2.905 |
| Bicycle LOS  | B     | C     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 40.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.849 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T T T    |      |      | T T T T T    |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name   | St Co |      |      | St Co |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 350   | 655  | 337  | 607   | 439  | 16   | 42           | 164  | 288  | 436          | 131  | 763  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 350   | 655  | 337  | 607   | 439  | 16   | 42           | 164  | 288  | 436          | 131  | 763  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 88    | 164  | 84   | 152   | 110  | 4    | 11           | 412  | 72   | 109          | 329  | 191  |
| Total Analysis Volume [veh/h]                                  | 350   | 655  | 337  | 607   | 439  | 16   | 42           | 164  | 288  | 436          | 131  | 763  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Ove  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 6    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      | 6,7  |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 6    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 30   |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 1.0  |
| Split [s]                    | 17   | 34   | 0    | 27   | 44   | 0    | 10   | 39   | 0    | 20   | 49   | 49   |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  |
| Walk [s]                     | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 7    |
| Pedestrian Clearance [s]     | 0    | 0    | 0    | 0    | 33   | 0    | 0    | 28   | 0    | 0    | 22   | 22   |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   | No   |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   | No   |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   | No   |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L   | C   | C   | R   | L    | C    | C    | L    | C    | C    | L    | C    | R    |
|---|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 12  | 12  | 12  | 12  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.0 | 4.0 | 4.0 | 4.0 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.0 | 2.0 | 2.0 | 2.0 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s]           | 13  | 25  | 25  | 25  | 23   | 35   | 35   | 5    | 40   | 40   | 16   | 51   | 78   |
| g / C, Green / Cycle                    | 0.1 | 0.2 | 0.2 | 0.2 | 0.19 | 0.29 | 0.29 | 0.04 | 0.33 | 0.33 | 0.13 | 0.43 | 0.65 |
| (v / s)_i Volume / Saturation Flow Rate | 0.1 | 0.1 | 0.1 | 0.1 | 0.17 | 0.12 | 0.12 | 0.01 | 0.26 | 0.25 | 0.12 | 0.23 | 0.40 |
| s, saturation flow rate [veh/h]         | 35  | 19  | 19  | 19  | 350  | 190  | 190  | 350  | 570  | 190  | 350  | 570  | 190  |
| c, Capacity [veh/h]                     | 38  | 39  | 39  | 39  | 671  | 553  | 553  | 135  | 189  | 632  | 468  | 244  | 124  |
| d1, Uniform Delay [s]                   | 52. | 46. | 45. | 44. | 47.4 | 34.2 | 34.2 | 56.1 | 35.8 | 35.8 | 51.4 | 25.5 | 12.0 |
| k, delay calibration                    | 0.1 | 0.2 | 0.2 | 0.1 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 9.2 | 13. | 11. | 5.1 | 4.91 | 0.49 | 0.48 | 1.30 | 3.02 | 8.51 | 8.80 | 0.86 | 2.29 |
| d3, Initial Queue Delay [s]             | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |     |     |     |     |      |      |      |      |      |      |      |      |      |
|---------------------------------------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.9 | 0.8 | 0.8 | 0.7 | 0.90 | 0.41 | 0.41 | 0.31 | 0.77 | 0.76 | 0.93 | 0.54 | 0.61 |
| d, Delay for Lane Group [s/veh]       | 62. | 59. | 57. | 49. | 52.3 | 34.7 | 34.7 | 57.4 | 38.8 | 44.3 | 60.2 | 26.4 | 14.3 |
| Lane Group LOS                        | E   | E   | E   | D   | D    | C    | C    | E    | D    | D    | E    | C    | B    |
| Critical Lane Group                   | No  | Ye  | No  | No  | Yes  | No   | No   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 5.7 | 11. | 11. | 9.0 | 9.29 | 5.47 | 5.40 | 0.64 | 13.1 | 14.0 | 7.05 | 9.42 | 11.8 |
| 50th-Percentile Queue Length [ft/ln]  | 14  | 28  | 27  | 22  | 232. | 136. | 134. | 16.1 | 328. | 350. | 176. | 235. | 295. |
| 95th-Percentile Queue Length [veh/ln] | 9.6 | 17. | 16. | 13. | 14.2 | 9.31 | 9.21 | 1.16 | 19.0 | 20.1 | 11.4 | 14.4 | 17.4 |
| 95th-Percentile Queue Length [ft/ln]  | 24  | 42  | 41  | 34  | 357. | 232. | 230. | 29.0 | 476. | 504. | 285. | 361. | 436. |

**Movement, Approach, & Intersection Results**

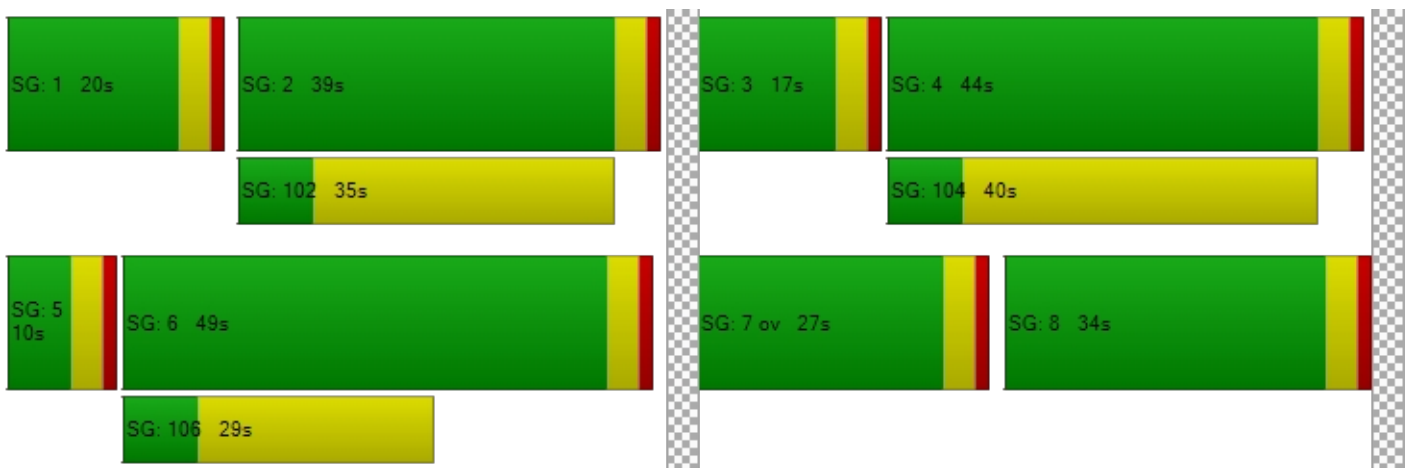
|                                 |       |      |       |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 62.2  | 58.7 | 50.0  | 52.3 | 34.7  | 34.7 | 57.4  | 39.5 | 44.3 | 60.2 | 26.4 | 14.3 |
| Movement LOS                    | E     | E    | D     | D    | C     | C    | E     | D    | D    | E    | C    | B    |
| d_A, Approach Delay [s/veh]     | 57.60 |      | 44.81 |      | 40.61 |      | 28.61 |      |      |      |      |      |
| Approach LOS                    | E     |      | D     |      | D     |      | C     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 40.19 |      |       |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | D     |      |       |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.849 |      |       |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.957 | 2.876 | 3.260 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 500   | 666   | 583   | 750   |
| d_b, Bicycle Delay [s]                                     | 33.76 | 26.68 | 30.12 | 23.45 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.667 | 2.436 | 2.376 | 2.943 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 18.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.647 |

**Intersection Setup**

| Name                         | SR-57    |      |       | SR-57 |      |       | Lambert Road |      |       | Lambert Road |      |       |  |  |  |  |  |  |
|------------------------------|----------|------|-------|-------|------|-------|--------------|------|-------|--------------|------|-------|--|--|--|--|--|--|
|                              | Approach |      |       |       |      |       | Northbound   |      |       | Southbound   |      |       |  |  |  |  |  |  |
| Lane Configuration           |          |      |       |       |      |       |              |      |       |              |      |       |  |  |  |  |  |  |
| Turning Movement             | Left     | Thru | Right | Left  | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |  |  |  |  |  |  |
| Lane Width [ft]              | 12.0     | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |  |  |  |  |  |  |
| No. of Lanes in Entry Pocket | 0        | 0    | 0     | 1     | 0    | 1     | 0            | 0    | 1     | 1            | 0    | 0     |  |  |  |  |  |  |
| Entry Pocket Length [ft]     | 100.     | 100. | 100.  | 100.  | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |  |  |  |  |  |  |
| No. of Lanes in Exit Pocket  | 0        | 0    | 0     | 0     | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |  |  |  |  |  |  |
| Exit Pocket Length [ft]      | 0.00     | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |  |  |  |  |  |  |
| Speed [mph]                  | 30.00    |      |       | 30.00 |      |       | 30.00        |      |       | 30.00        |      |       |  |  |  |  |  |  |
| Grade [%]                    | 0.00     |      |       | 0.00  |      |       | 0.00         |      |       | 0.00         |      |       |  |  |  |  |  |  |
| Curb Present                 |          |      |       | No    |      |       | No           |      |       | No           |      |       |  |  |  |  |  |  |
| Crosswalk                    | Yes      |      |       | Yes   |      |       | No           |      |       | No           |      |       |  |  |  |  |  |  |

**Volumes**

| Name   | SR-57 |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 0     | 0    | 0    | 524   | 0    | 855  | 0            | 148  | 835  | 265          | 177  | 0    |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 0     | 0    | 0    | 524   | 0    | 855  | 0            | 148  | 835  | 265          | 177  | 0    |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 0     | 0    | 0    | 131   | 0    | 214  | 0            | 370  | 209  | 66           | 443  | 0    |
| Total Analysis Volume [veh/h]                                  | 0     | 0    | 0    | 524   | 0    | 855  | 0            | 148  | 835  | 265          | 177  | 0    |
| Presence of On-Street Parking                                  |       |      |      | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Split | Per  | Split | Per  | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|-------|------|-------|------|------|------|------|------|------|
| Signal Group                 | 0    | 0    | 0    | 7     | 0    | 0     | 0    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |       |      |       |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | Lea   | -    | -     | -    | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 0    | 0    | 6     | 0    | 0     | 0    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 0    | 0    | 30    | 0    | 0     | 0    | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 0.0  | 0.0  | 1.0   | 0.0  | 0.0   | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 0    | 0    | 45    | 0    | 0     | 0    | 32   | 0    | 13   | 45   | 0    |
| Vehicle Extension [s]        | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 12   | 0    | 0    | 20   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      |      |      | No    |      |       |      | No   |      | No   | No   |      |
| Maximum Recall               |      |      |      | No    |      |       |      | No   |      | No   | No   |      |
| Pedestrian Recall            |      |      |      | No    |      |       |      | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              |  | L     | R     | C     | R     | L     | C    |
|---|--|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     |  | 90    | 90    | 90    | 90    | 90    | 90   |
| L, Total Lost Time per Cycle [s]        |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 |
| g_i, Effective Green Time [s]           |  | 26    | 26    | 44    | 44    | 9     | 56   |
| g / C, Green / Cycle                    |  | 0.28  | 0.28  | 0.49  | 0.49  | 0.10  | 0.63 |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.15  | 0.23  | 0.26  | 0.22  | 0.08  | 0.31 |
| s, saturation flow rate [veh/h]         |  | 3500  | 3800  | 5700  | 3800  | 3500  | 5700 |
| c, Capacity [veh/h]                     |  | 995   | 1080  | 2767  | 1845  | 340   | 3574 |
| d1, Uniform Delay [s]                   |  | 27.13 | 29.77 | 16.10 | 15.28 | 39.71 | 9.09 |
| k, delay calibration                    |  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 |
| l, Upstream Filtering Factor            |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               |  | 0.43  | 1.35  | 0.75  | 0.80  | 3.89  | 0.49 |
| d3, Initial Queue Delay [s]             |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |  |        |        |        |        |        |        |
|---------------------------------------|--|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  |  | 0.53   | 0.79   | 0.53   | 0.45   | 0.78   | 0.50   |
| d, Delay for Lane Group [s/veh]       |  | 27.57  | 31.12  | 16.85  | 16.08  | 43.60  | 9.58   |
| Lane Group LOS                        |  | C      | C      | B      | B      | D      | A      |
| Critical Lane Group                   |  | No     | Yes    | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] |  | 4.69   | 8.49   | 6.84   | 5.54   | 3.01   | 5.68   |
| 50th-Percentile Queue Length [ft/ln]  |  | 117.20 | 212.19 | 170.90 | 138.55 | 75.20  | 141.98 |
| 95th-Percentile Queue Length [veh/ln] |  | 8.24   | 13.27  | 11.12  | 9.40   | 5.41   | 9.59   |
| 95th-Percentile Queue Length [ft/ln]  |  | 205.97 | 331.63 | 278.09 | 235.07 | 135.36 | 239.69 |

**Movement, Approach, & Intersection Results**

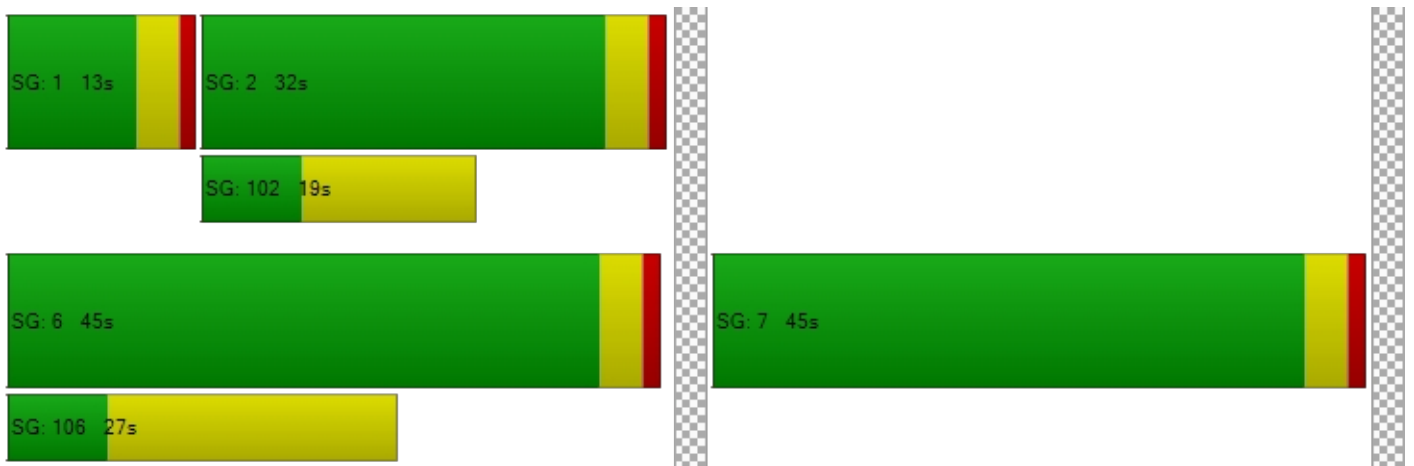
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 27.5  | 0.00 | 31.1 | 0.00  | 16.8 | 16.0 | 43.6  | 9.58 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C    |       | B    | B    | D     | A    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 29.77 |      |      | 16.57 |      |      | 14.01 |      |      |
| Approach LOS                    | A     |      |      | C     |      |      | B     |      |      | B     |      |      |
| d_I, Intersection Delay [s/veh] | 18.84 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | B     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.647 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.68 | 34.68 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.251 | 2.467 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 0     | 911   | 622   | 911   |
| d_b, Bicycle Delay [s]                                     | 45.01 | 13.35 | 21.37 | 13.35 |
| I_b,int, Bicycle LOS Score for Intersection                | 4.132 | 1.560 | 2.833 | 2.679 |
| Bicycle LOS  | D     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 13.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.533 |

**Intersection Setup**

| Name                         | SR-57      |      |      | SR-57      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | TTT        |      |      |            |      |      | TTT          |      |      | TTT          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 0          | 0    | 0    | 1            | 0    | 1    | 0            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      |            |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | No         |      |      | No           |      |      | No           |      |      |

**Volumes**

| Name   | SR-57 |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 676   | 0    | 329  | 0     | 0    | 0    | 0            | 164  | 576  | 0            | 118  | 570  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 676   | 0    | 329  | 0     | 0    | 0    | 0            | 164  | 576  | 0            | 118  | 570  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 0.00 |
| Total 15-Minute Volume [veh/h]                                 | 169   | 0    | 82   | 0     | 0    | 0    | 0            | 412  | 144  | 0            | 297  | 0    |
| Total Analysis Volume [veh/h]                                  | 676   | 0    | 329  | 0     | 0    | 0    | 0            | 164  | 576  | 0            | 118  | 0    |
| Presence of On-Street Parking                                  | No    |      | No   |       |      |      | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Split | Per  | Split | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Unsi |
|------------------------------|-------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3     | 0    | 0     | 0    | 0    | 0    | 0    | 2    | 0    | 0    | 6    | 0    |      |
| Auxiliary Signal Groups      |       |      |       |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea   | -    | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 6     | 0    | 0     | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |      |
| Maximum Green [s]            | 30    | 0    | 0     | 0    | 0    | 0    | 0    | 30   | 0    | 0    | 30   | 0    |      |
| Amber [s]                    | 3.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |      |
| All red [s]                  | 1.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |      |
| Split [s]                    | 54    | 0    | 0     | 0    | 0    | 0    | 0    | 36   | 0    | 0    | 36   | 0    |      |
| Vehicle Extension [s]        | 3.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |      |
| Walk [s]                     | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    |      |
| Pedestrian Clearance [s]     | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 25   | 0    | 0    | 0    | 0    |      |
| Delayed Vehicle Green [s]    | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |      |
| Rest In Walk                 | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |      |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |      |
| Minimum Recall               | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| Maximum Recall               | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| Pedestrian Recall            | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| Detector Location [ft]       | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |      |
| Detector Length [ft]         | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |      |
| I, Upstream Filtering Factor | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | R     |  | C    | C    | R    | C    |
|---|-------|-------|--|------|------|------|------|
| C, Cycle Length [s]                     | 90    | 90    |  | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 22    | 22    |  | 60   | 60   | 60   | 60   |
| g / C, Green / Cycle                    | 0.24  | 0.24  |  | 0.67 | 0.67 | 0.67 | 0.67 |
| (v / s)_i Volume / Saturation Flow Rate | 0.19  | 0.17  |  | 0.29 | 0.29 | 0.29 | 0.21 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 380  | 190  | 190  | 5700 |
| c, Capacity [veh/h]                     | 836   | 454   |  | 255  | 127  | 127  | 3831 |
| d1, Uniform Delay [s]                   | 32.25 | 31.47 |  | 6.83 | 6.83 | 6.83 | 6.10 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.50 | 0.50 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.92  | 2.22  |  | 0.54 | 1.08 | 1.08 | 0.21 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |  |      |      |      |        |
|---------------------------------------|--------|--------|--|------|------|------|--------|
| X, volume / capacity                  | 0.81   | 0.73   |  | 0.44 | 0.44 | 0.44 | 0.31   |
| d, Delay for Lane Group [s/veh]       | 34.18  | 33.69  |  | 7.37 | 7.91 | 7.91 | 6.31   |
| Lane Group LOS                        | C      | C      |  | A    | A    | A    | A      |
| Critical Lane Group                   | Yes    | No     |  | Yes  | No   | No   | No     |
| 50th-Percentile Queue Length [veh/ln] | 6.97   | 6.69   |  | 4.37 | 4.56 | 4.56 | 2.73   |
| 50th-Percentile Queue Length [ft/ln]  | 174.35 | 167.30 |  | 109. | 114. | 114. | 68.20  |
| 95th-Percentile Queue Length [veh/ln] | 11.31  | 10.93  |  | 7.80 | 8.06 | 8.06 | 4.91   |
| 95th-Percentile Queue Length [ft/ln]  | 282.63 | 273.36 |  | 194. | 201. | 201. | 122.75 |

**Movement, Approach, & Intersection Results**

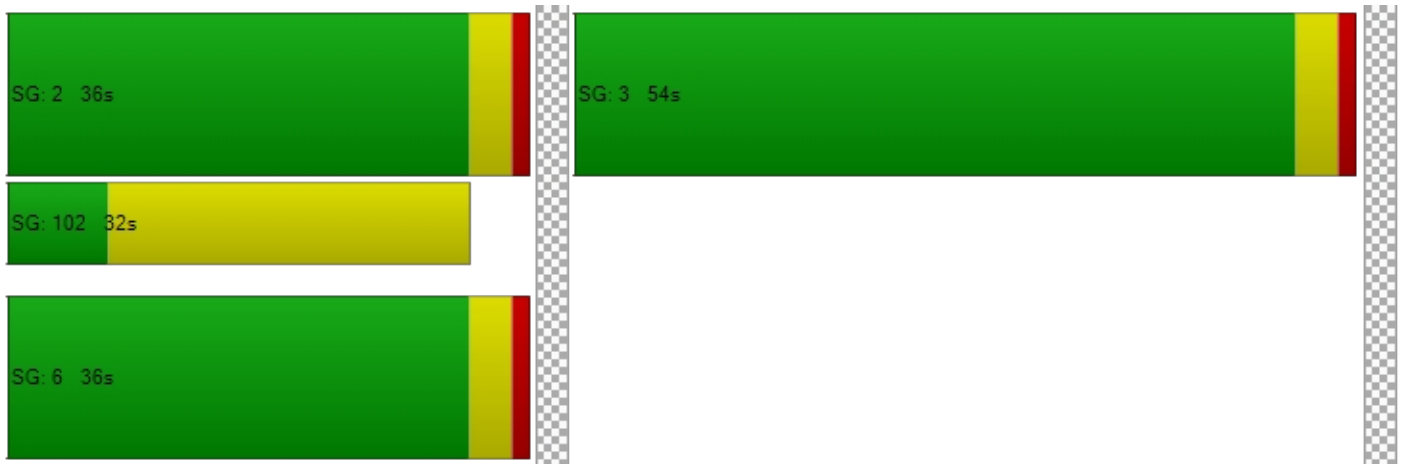
|                                 |       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 34.1  | 0.00 | 33.6 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7.42 | 7.91 | 0.00 | 6.31 | 0.00 |
| Movement LOS                    | C     |      | C    |      |      |      |      |      | A    | A    |      | A    |      |
| d_A, Approach Delay [s/veh]     | 34.02 |      | 0.00 |      | 7.64 |      | 6.31 |      |      |      |      |      |      |
| Approach LOS                    | C     |      | A    |      | A    |      | A    |      |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 13.29 |      |      |      |      |      |      |      |      |      |      |      |      |
| Intersection LOS                | B     |      |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.533 |      |      |      |      |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 0.0   | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.63 | 0.00  | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.608 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | F     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1112  | 0     | 712   | 712   |
| d_b, Bicycle Delay [s]                                     | 8.86  | 44.96 | 18.65 | 18.65 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.560 | 4.132 | 2.783 | 2.212 |
| Bicycle LOS  | A     | D     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 14.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.620 |

**Intersection Setup**

| Name                         | Pointe Drive |      |       | Pointe Drive |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|--------------|------|-------|--------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Northbound   |      |       | Southbound   |      |       | Eastbound    |      |       | Westbound    |      |       |
| Approach                     | Northbound   |      |       | Southbound   |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           | +            |      |       | + r r        |      |       | r r l l      |      |       | r l l        |      |       |
| Turning Movement             | Left         | Thru | Right | Left         | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0            | 0    | 0     | 0            | 0    | 1     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.         | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0            | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00        |      |       | 30.00        |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00         |      |       | 0.00         |      |       | 0.00         |      |       | 0.00         |      |       |
| Curb Present                 | No           |      |       | No           |      |       | No           |      |       | No           |      |       |
| Crosswalk                    | Yes          |      |       | Yes          |      |       | No           |      |       | Yes          |      |       |

**Volumes**

| Name   | Pointe Drive |      |      | Pointe Drive |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
|  |              |      |      |              |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 124          | 0    | 30   | 120          | 0    | 447  | 204          | 223  | 42   | 16           | 172  | 60   |
| Base Volume Adjustment Factor                                  | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 124          | 0    | 30   | 120          | 0    | 447  | 204          | 223  | 42   | 16           | 172  | 60   |
| Peak Hour Factor   | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 31           | 0    | 8    | 30           | 0    | 112  | 51           | 558  | 11   | 4            | 431  | 15   |
| Total Analysis Volume [veh/h]                                  | 124          | 0    | 30   | 120          | 0    | 447  | 204          | 223  | 42   | 16           | 172  | 60   |
| Presence of On-Street Parking                                  | No           |      | No   | No           |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 48   | 0    | 0    | 48   | 0    | 11   | 32   | 0    | 10   | 31   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 33   | 0    | 0    | 0    | 0    | 0    | 14   | 0    | 0    | 20   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90   | 90   | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 14    | 14    | 14    | 7    | 62   | 62   | 2    | 57   | 57   |
| g / C, Green / Cycle                    | 0.15  | 0.15  | 0.15  | 0.08 | 0.69 | 0.69 | 0.02 | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.07  | 0.12  | 0.06 | 0.39 | 0.41 | 0.01 | 0.31 | 0.32 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 350  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 345   | 353   | 576   | 275  | 262  | 131  | 42   | 241  | 120  |
| d1, Uniform Delay [s]                   | 35.44 | 34.72 | 36.73 | 40.5 | 7.04 | 7.26 | 43.3 | 8.62 | 8.75 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.91  | 0.57  | 2.28  | 3.90 | 0.90 | 1.98 | 5.64 | 0.70 | 1.49 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |      |      |      |      |      |      |
|---------------------------------------|--------|--------|--------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.45   | 0.34   | 0.78   | 0.74 | 0.57 | 0.59 | 0.38 | 0.49 | 0.50 |
| d, Delay for Lane Group [s/veh]       | 36.34  | 35.29  | 39.01  | 44.4 | 7.94 | 9.24 | 48.9 | 9.32 | 10.2 |
| Lane Group LOS                        | D      | D      | D      | D    | A    | A    | D    | A    | B    |
| Critical Lane Group                   | No     | No     | Yes    | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 3.17   | 2.41   | 4.83   | 2.33 | 6.23 | 7.08 | 0.41 | 5.51 | 6.03 |
| 50th-Percentile Queue Length [ft/ln]  | 79.37  | 60.33  | 120.68 | 58.3 | 155. | 177. | 10.3 | 137. | 150. |
| 95th-Percentile Queue Length [veh/ln] | 5.71   | 4.34   | 8.43   | 4.20 | 10.3 | 11.4 | 0.74 | 9.35 | 10.0 |
| 95th-Percentile Queue Length [ft/ln]  | 142.86 | 108.59 | 210.77 | 105. | 258. | 286. | 18.6 | 233. | 251. |

**Movement, Approach, & Intersection Results**

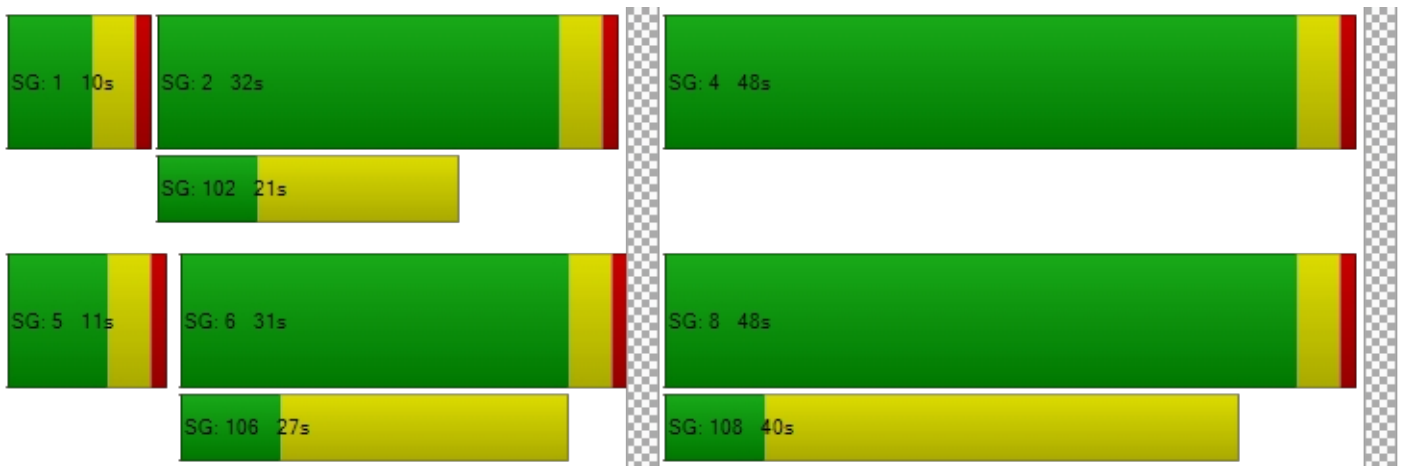
|                                 |       |      |      |       |      |      |       |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 36.3  | 36.3 | 36.3 | 35.2  | 35.2 | 39.0 | 44.4  | 8.37 | 9.24 | 48.9 | 9.61 | 10.2 |
| Movement LOS                    | D     | D    | D    | D     | D    | D    | D     | A    | A    | D    | A    | B    |
| d_A, Approach Delay [s/veh]     | 36.34 |      |      | 38.22 |      |      | 11.36 |      |      | 9.98 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | B     |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 14.68 |      |      |       |      |      |       |      |      |      |      |      |
| Intersection LOS                | B     |      |      |       |      |      |       |      |      |      |      |      |
| Intersection V/C                | 0.620 |      |      |       |      |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.68 | 34.68 | 0.00  | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.818 | 2.461 | 0.000 | 3.346 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 978   | 978   | 622   | 600   |
| d_b, Bicycle Delay [s]                                     | 11.76 | 11.76 | 21.37 | 22.06 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.814 | 2.495 | 2.923 | 2.549 |
| Bicycle LOS  | A     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.666 |

**Intersection Setup**

| Name                         | N As       |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound  |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T          |      |      | T           |      |      | T T T T      |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left        | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0        | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1           | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.        | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00        | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00       |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00        |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No          |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes         |      |      | Yes          |      |      | Yes          |      |      |



**Volumes**

| Name   | N As |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]                                      | 147  | 59   | 23   | 88          | 112  | 144  | 47           | 213  | 216  | 27           | 153  | 46   |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00        | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 147  | 59   | 23   | 88          | 112  | 144  | 47           | 213  | 216  | 27           | 153  | 46   |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 37   | 15   | 6    | 22          | 28   | 36   | 12           | 535  | 54   | 7            | 383  | 12   |
| Total Analysis Volume [veh/h]                                  | 147  | 59   | 23   | 88          | 112  | 144  | 47           | 213  | 216  | 27           | 153  | 46   |
| Presence of On-Street Parking                                  | No   |      | No   | No          |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 19   | 27   | 0    | 22   | 30   | 0    | 10   | 31   | 0    | 10   | 31   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 16   | 0    | 0    | 19   | 0    | 0    | 20   | 0    | 0    | 20   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L    | C    | R    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 9    | 13   | 13   | 6    | 9    | 9    | 4    | 53   | 53   | 3    | 51   | 51   |
| g / C, Green / Cycle                    | 0.10 | 0.14 | 0.14 | 0.06 | 0.10 | 0.10 | 0.05 | 0.58 | 0.58 | 0.03 | 0.57 | 0.57 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.02 | 0.02 | 0.05 | 0.06 | 0.08 | 0.01 | 0.38 | 0.11 | 0.02 | 0.27 | 0.28 |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 350  | 570  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 184  | 267  | 267  | 117  | 196  | 196  | 166  | 332  | 110  | 61   | 216  | 108  |
| d1, Uniform Delay [s]                   | 39.5 | 34.0 | 34.0 | 41.4 | 38.5 | 39.2 | 41.4 | 12.5 | 8.86 | 42.7 | 11.5 | 11.6 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 7.68 | 0.27 | 0.26 | 9.31 | 2.60 | 5.22 | 0.92 | 0.97 | 0.39 | 4.87 | 0.77 | 1.64 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.80 | 0.16 | 0.15 | 0.75 | 0.57 | 0.73 | 0.28 | 0.64 | 0.20 | 0.44 | 0.48 | 0.50 |
| d, Delay for Lane Group [s/veh]       | 47.2 | 34.3 | 34.2 | 50.7 | 41.1 | 44.4 | 42.3 | 13.5 | 9.25 | 47.5 | 12.2 | 13.3 |
| Lane Group LOS                        | D    | C    | C    | D    | D    | D    | D    | B    | A    | D    | B    | B    |
| Critical Lane Group                   | Yes  | No   | No   | No   | No   | Yes  | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 3.53 | 0.82 | 0.78 | 2.20 | 2.47 | 3.33 | 0.52 | 8.88 | 1.95 | 0.67 | 5.85 | 6.39 |
| 50th-Percentile Queue Length [ft/ln]  | 88.2 | 20.4 | 19.5 | 55.0 | 61.7 | 83.3 | 13.0 | 221. | 48.8 | 16.6 | 146. | 159. |
| 95th-Percentile Queue Length [veh/ln] | 6.35 | 1.47 | 1.41 | 3.96 | 4.45 | 6.00 | 0.94 | 13.7 | 3.52 | 1.20 | 9.82 | 10.5 |
| 95th-Percentile Queue Length [ft/ln]  | 158. | 36.7 | 35.2 | 99.1 | 111. | 150. | 23.4 | 344. | 87.8 | 30.0 | 245. | 263. |

**Movement, Approach, & Intersection Results**

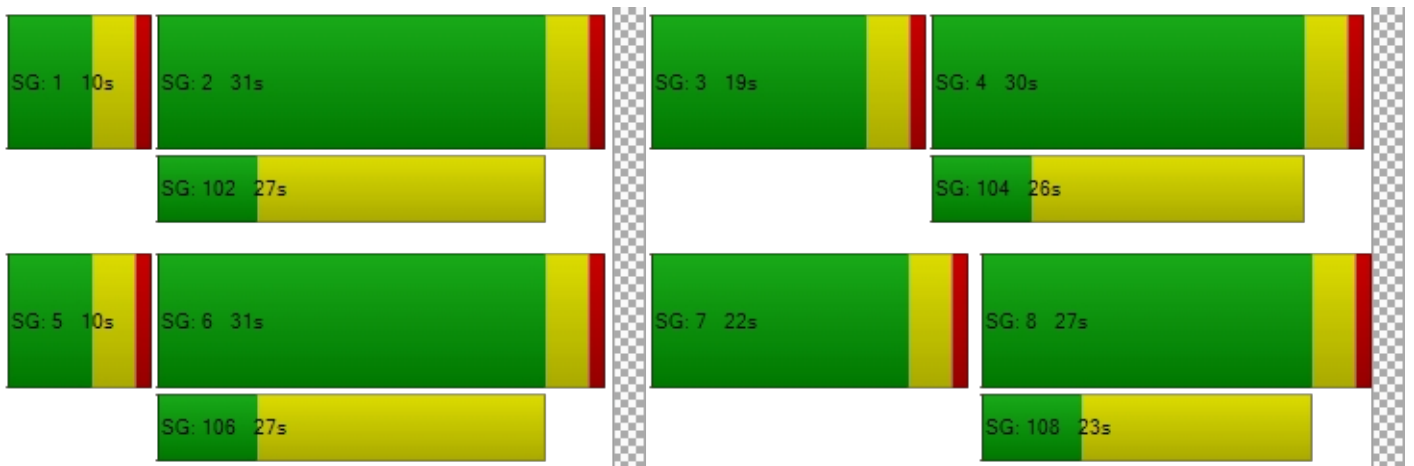
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 47.2  | 34.3 | 34.2 | 50.7  | 41.1 | 44.4 | 42.3  | 13.5 | 9.25 | 47.5  | 12.6 | 13.3 |
| Movement LOS                    | D     | C    | C    | D     | D    | D    | D     | B    | A    | D     | B    | B    |
| d_A, Approach Delay [s/veh]     | 42.61 |      |      | 44.98 |      |      | 13.72 |      |      | 13.21 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | B     |      |      | B     |      |      |
| d_I, Intersection Delay [s/veh] | 17.33 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | B     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.666 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.72 | 34.72 | 34.72 | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.413 | 2.396 | 3.307 | 3.131 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 511   | 577   | 599   | 599   |
| d_b, Bicycle Delay [s]                                     | 24.98 | 22.80 | 22.09 | 22.09 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.749 | 1.843 | 2.881 | 2.443 |
| Bicycle LOS  | A     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 30.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.653 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound    |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T           |      |      | T T T        |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left          | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0          | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1             | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.          | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00          | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00         |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00          |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No            |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes           |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | Kr Bo |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]                                      | 547   | 327  | 292  | 6             | 116  | 126  | 199          | 116  | 516  | 128          | 530  | 31   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 547   | 327  | 292  | 6             | 116  | 126  | 199          | 116  | 516  | 128          | 530  | 31   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 137   | 82   | 73   | 2             | 29   | 32   | 50           | 291  | 129  | 32           | 133  | 8    |
| Total Analysis Volume [veh/h]                                  | 547   | 327  | 292  | 6             | 116  | 126  | 199          | 116  | 516  | 128          | 530  | 31   |
| Presence of On-Street Parking                                  | No    |      | No   | No            |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Ove  | Prot | Per  | Per  | Prot | Per  | Ove  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 8    | 7    | 4    | 0    | 5    | 2    | 2    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      | 1,8  |      |      |      |      |      | 2,3  |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 6    | 6    | 6    | 0    | 6    | 6    | 6    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 30   | 30   | 30   | 0    | 30   | 30   | 30   | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 26   | 58   | 58   | 10   | 42   | 0    | 20   | 42   | 42   | 10   | 32   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 7    | 0    | 7    | 0    | 0    | 7    | 7    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 30   | 30   | 0    | 31   | 0    | 0    | 26   | 26   | 0    | 21   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   | No   | No   | No   |      | No   | No   | No   | No   | No   |      |
| Maximum Recall               | No   | No   | No   | No   | No   |      | No   | No   | No   | No   | No   |      |
| Pedestrian Recall            | No   | No   | No   | No   | No   |      | No   | No   | No   | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | R    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 21   | 30   | 40   | 1    | 10   | 10   | 15   | 67   | 92   | 6    | 57   | 57   |
| g / C, Green / Cycle                    | 0.18 | 0.25 | 0.34 | 0.01 | 0.09 | 0.09 | 0.13 | 0.55 | 0.76 | 0.05 | 0.48 | 0.48 |
| (v / s)_i Volume / Saturation Flow Rate | 0.16 | 0.17 | 0.15 | 0.00 | 0.06 | 0.07 | 0.11 | 0.31 | 0.14 | 0.04 | 0.10 | 0.10 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 180  | 190  | 190  | 180  | 380  | 380  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 615  | 480  | 639  | 18   | 165  | 165  | 227  | 210  | 289  | 178  | 181  | 909  |
| d1, Uniform Delay [s]                   | 48.3 | 40.5 | 31.2 | 59.0 | 53.3 | 53.6 | 51.5 | 17.2 | 3.92 | 56.1 | 18.1 | 18.1 |
| k, delay calibration                    | 0.11 | 0.11 | 0.17 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.65 | 1.72 | 0.79 | 10.3 | 5.38 | 7.16 | 10.3 | 1.06 | 0.13 | 5.41 | 0.25 | 0.53 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.89 | 0.68 | 0.46 | 0.33 | 0.70 | 0.76 | 0.88 | 0.55 | 0.18 | 0.72 | 0.20 | 0.21 |
| d, Delay for Lane Group [s/veh]       | 52.9 | 42.2 | 32.0 | 69.4 | 58.7 | 60.7 | 61.8 | 18.3 | 4.05 | 61.5 | 18.3 | 18.6 |
| Lane Group LOS                        | D    | D    | C    | E    | E    | E    | E    | B    | A    | E    | B    | B    |
| Critical Lane Group                   | Yes  | No   | No   | No   | No   | Yes  | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 8.37 | 8.93 | 6.78 | 0.23 | 3.65 | 4.05 | 6.53 | 10.3 | 1.55 | 2.05 | 3.04 | 3.20 |
| 50th-Percentile Queue Length [ft/ln]  | 209. | 223. | 169. | 5.84 | 91.3 | 101. | 163. | 259. | 38.7 | 51.1 | 75.9 | 80.0 |
| 95th-Percentile Queue Length [veh/ln] | 13.1 | 13.8 | 11.0 | 0.42 | 6.58 | 7.29 | 10.7 | 15.6 | 2.79 | 3.68 | 5.47 | 5.76 |
| 95th-Percentile Queue Length [ft/ln]  | 327. | 345. | 276. | 10.5 | 164. | 182. | 267. | 391. | 69.7 | 92.0 | 136. | 144. |



**Movement, Approach, & Intersection Results**

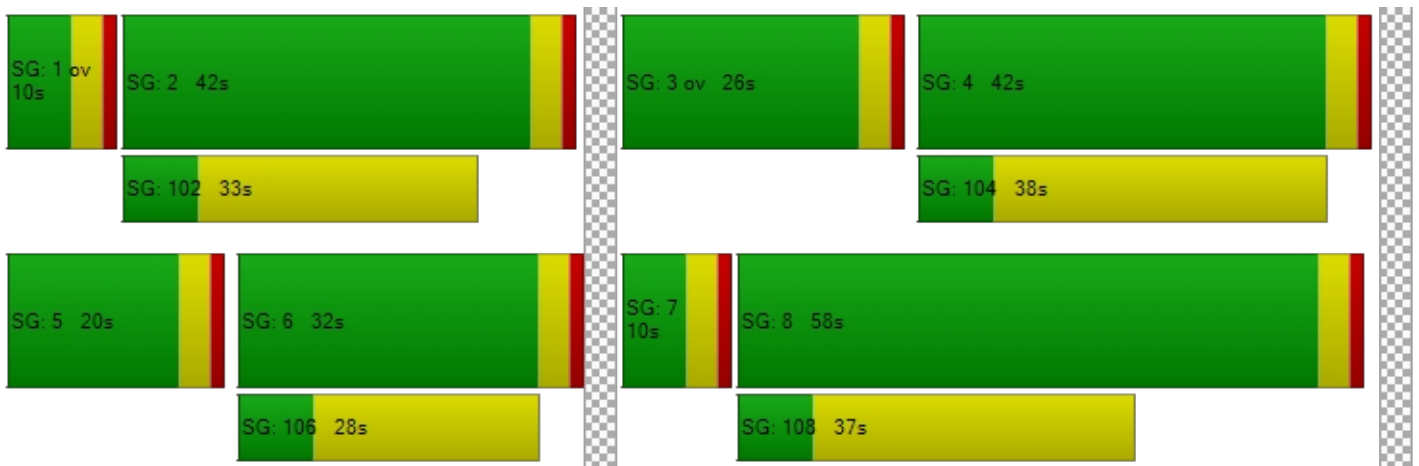
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 52.9  | 42.2 | 32.0 | 69.4  | 58.7 | 60.7 | 61.8  | 18.3 | 4.05 | 61.5  | 18.4 | 18.6 |
| Movement LOS                    | D     | D    | C    | E     | E    | E    | E     | B    | A    | E     | B    | B    |
| d_A, Approach Delay [s/veh]     | 44.72 |      |      | 60.02 |      |      | 19.01 |      |      | 26.48 |      |      |
| Approach LOS                    | D     |      |      | E     |      |      | B     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 30.38 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.653 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.780 | 2.341 | 3.115 | 2.907 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 900   | 633   | 633   | 467   |
| d_b, Bicycle Delay [s]                                     | 18.16 | 28.03 | 28.03 | 35.28 |
| I_b,int, Bicycle LOS Score for Intersection                | 3.484 | 1.969 | 3.111 | 1.939 |
| Bicycle LOS  | C     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.9   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.511 |

**Intersection Setup**

| Name                         | Sunflower Street |      |      | Sunflower Street |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------------|------|------|------------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound       |      |      | Southbound       |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     |                  |      |      |                  |      |      |              |      |      |              |      |      |
| Lane Configuration           |                  |      |      |                  |      |      |              |      |      |              |      |      |
| Turning Movement             | Left             | Thru | Righ | Left             | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0             | 12.0 | 12.0 | 12.0             | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1                | 0    | 0    | 0                | 0    | 1    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.             | 100. | 100. | 100.             | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00             | 0.00 | 0.00 | 0.00             | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00            |      |      | 30.00            |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00             |      |      | 0.00             |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No               |      |      | No               |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes              |      |      | Yes              |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | Sunflower Street |      |      | Sunflower Street |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------------------|------|------|------------------|------|------|--------------|------|------|--------------|------|------|
|  |                  |      |      |                  |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 27               | 2    | 14   | 2                | 0    | 6    | 6            | 164  | 22   | 6            | 862  | 3    |
| Base Volume Adjustment Factor                                  | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00             | 2.00 | 2.00 | 2.00             | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 27               | 2    | 14   | 2                | 0    | 6    | 6            | 164  | 22   | 6            | 862  | 3    |
| Peak Hour Factor   | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 7                | 1    | 4    | 1                | 0    | 2    | 2            | 411  | 6    | 2            | 216  | 1    |
| Total Analysis Volume [veh/h]                                  | 27               | 2    | 14   | 2                | 0    | 6    | 6            | 164  | 22   | 6            | 862  | 3    |
| Presence of On-Street Parking                                  | No               |      | No   | No               |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 7    | 0    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 6    | 0    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 30   | 0    | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 40   | 0    | 40   | 0    | 0    | 10   | 30   | 0    | 10   | 30   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 7    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 29   | 0    | 29   | 0    | 0    | 0    | 18   | 0    | 0    | 16   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      | No   |      |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      | No   |      |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      | No   |      |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 1     | 1     | 1    | 97   | 97   | 1    | 97   | 97   |
| g / C, Green / Cycle                    | 0.04  | 0.04  | 0.01  | 0.01  | 0.01 | 0.81 | 0.81 | 0.01 | 0.81 | 0.81 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02  | 0.01  | 0.00  | 0.00  | 0.00 | 0.44 | 0.44 | 0.00 | 0.15 | 0.16 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 180  | 190  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 69    | 73    | 22    | 23    | 17   | 153  | 153  | 17   | 306  | 153  |
| d1, Uniform Delay [s]                   | 56.33 | 55.95 | 58.63 | 58.75 | 59.0 | 4.00 | 4.00 | 59.0 | 2.64 | 2.67 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.53  | 1.48  | 1.77  | 5.77  | 11.6 | 1.39 | 1.38 | 11.6 | 0.13 | 0.28 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.39  | 0.22  | 0.09  | 0.26  | 0.35 | 0.54 | 0.54 | 0.35 | 0.19 | 0.19 |
| d, Delay for Lane Group [s/veh]       | 59.86 | 57.43 | 60.40 | 64.52 | 70.7 | 5.39 | 5.38 | 70.7 | 2.78 | 2.95 |
| Lane Group LOS                        | E     | E     | E     | E     | E    | A    | A    | E    | A    | A    |
| Critical Lane Group                   | Yes   | No    | No    | Yes   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.87  | 0.50  | 0.07  | 0.22  | 0.24 | 5.85 | 5.83 | 0.24 | 1.24 | 1.37 |
| 50th-Percentile Queue Length [ft/ln]  | 21.70 | 12.52 | 1.77  | 5.45  | 5.93 | 146. | 145. | 5.93 | 30.9 | 34.2 |
| 95th-Percentile Queue Length [veh/ln] | 1.56  | 0.90  | 0.13  | 0.39  | 0.43 | 9.82 | 9.78 | 0.43 | 2.23 | 2.47 |
| 95th-Percentile Queue Length [ft/ln]  | 39.05 | 22.54 | 3.19  | 9.81  | 10.6 | 245. | 244. | 10.6 | 55.7 | 61.7 |

**Movement, Approach, & Intersection Results**

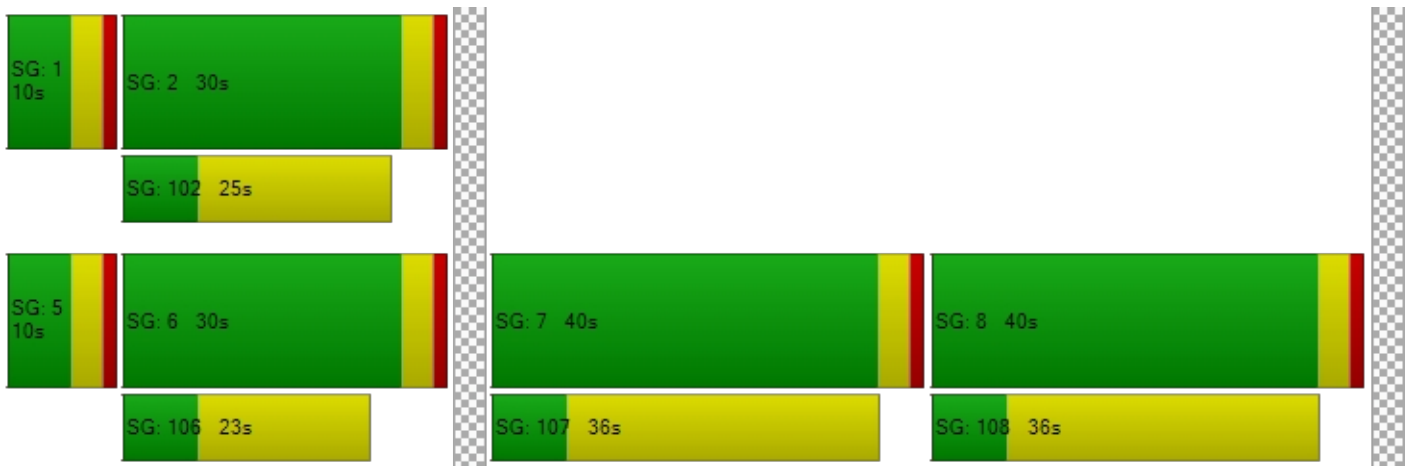
|                                 |       |      |      |       |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 59.8  | 57.4 | 57.4 | 60.4  | 0.00 | 64.5 | 70.7 | 5.39 | 5.38 | 70.7 | 2.84 | 2.95 |
| Movement LOS                    | E     | E    | E    | E     |      | E    | E    | A    | A    | E    | A    | A    |
| d_A, Approach Delay [s/veh]     | 58.96 |      |      | 63.49 |      |      | 5.62 |      |      | 3.30 |      |      |
| Approach LOS                    | E     |      |      | E     |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 5.91  |      |      |       |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |      |       |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.511 |      |      |       |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.977 | 1.960 | 2.883 | 2.878 |
| Crosswalk LOS  | A     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 600   | 600   | 433   | 433   |
| d_b, Bicycle Delay [s]                                     | 29.41 | 29.41 | 36.82 | 36.82 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.631 | 1.560 | 2.937 | 2.039 |
| Bicycle LOS  | A     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 37.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.717 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Lambert Road |      |      | Ca Ca     |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram]    |      |      | [Diagram] |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes       |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Lambert Road |      |      | Ca Ca |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|-------|------|------|
|  |       |      |      |       |      |      |              |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 404   | 154  | 840  | 26    | 118  | 36   | 31           | 915  | 573  | 189   | 357  | 9    |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 404   | 154  | 840  | 26    | 118  | 36   | 31           | 915  | 573  | 189   | 357  | 9    |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 101   | 39   | 210  | 7     | 30   | 9    | 8            | 229  | 143  | 47    | 89   | 2    |
| Total Analysis Volume [veh/h]                                  | 404   | 154  | 840  | 26    | 118  | 36   | 31           | 915  | 573  | 189   | 357  | 9    |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Unsi | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 30   | 61   | 0    | 12   | 43   | 0    | 10   | 36   | 0    | 11   | 37   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 31   | 0    | 0    | 32   | 0    | 0    | 25   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L    | C    | C    | L    | C    | C    | L    | C    | C    |
|---|-------|-------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 26    | 30    | 4    | 7    | 7    | 4    | 64   | 64   | 7    | 67   | 67   |
| g / C, Green / Cycle                    | 0.22  | 0.25  | 0.03 | 0.06 | 0.06 | 0.03 | 0.53 | 0.53 | 0.06 | 0.56 | 0.56 |
| (v / s)_i Volume / Saturation Flow Rate | 0.22  | 0.04  | 0.01 | 0.04 | 0.04 | 0.02 | 0.24 | 0.30 | 0.05 | 0.06 | 0.07 |
| s, saturation flow rate [veh/h]         | 1800  | 3800  | 180  | 190  | 190  | 180  | 380  | 190  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 390   | 938   | 54   | 114  | 114  | 60   | 201  | 100  | 207  | 211  | 105  |
| d1, Uniform Delay [s]                   | 47.02 | 35.50 | 57.3 | 55.3 | 55.2 | 57.1 | 17.3 | 18.9 | 56.1 | 12.5 | 12.6 |
| k, delay calibration                    | 0.38  | 0.11  | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 49.09 | 0.08  | 6.57 | 7.07 | 6.53 | 6.86 | 0.74 | 2.32 | 14.5 | 0.11 | 0.23 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |       |      |      |      |      |      |      |      |      |      |
|---------------------------------------|--------|-------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 1.04   | 0.16  | 0.48 | 0.69 | 0.67 | 0.52 | 0.45 | 0.57 | 0.91 | 0.11 | 0.12 |
| d, Delay for Lane Group [s/veh]       | 96.11  | 35.58 | 63.8 | 62.3 | 61.7 | 63.9 | 18.1 | 21.2 | 70.7 | 12.6 | 12.8 |
| Lane Group LOS                        | F      | D     | E    | E    | E    | E    | B    | C    | E    | B    | B    |
| Critical Lane Group                   | Yes    | No    | No   | Yes  | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 16.89  | 1.79  | 0.88 | 2.54 | 2.46 | 1.04 | 7.88 | 11.0 | 3.27 | 1.56 | 1.66 |
| 50th-Percentile Queue Length [ft/ln]  | 422.17 | 44.86 | 21.9 | 63.5 | 61.4 | 26.0 | 196. | 277. | 81.6 | 38.8 | 41.4 |
| 95th-Percentile Queue Length [veh/ln] | 24.10  | 3.23  | 1.58 | 4.57 | 4.43 | 1.87 | 12.4 | 16.5 | 5.88 | 2.80 | 2.99 |
| 95th-Percentile Queue Length [ft/ln]  | 602.56 | 80.74 | 39.4 | 114. | 110. | 46.8 | 312. | 413. | 146. | 70.0 | 74.6 |

**Movement, Approach, & Intersection Results**

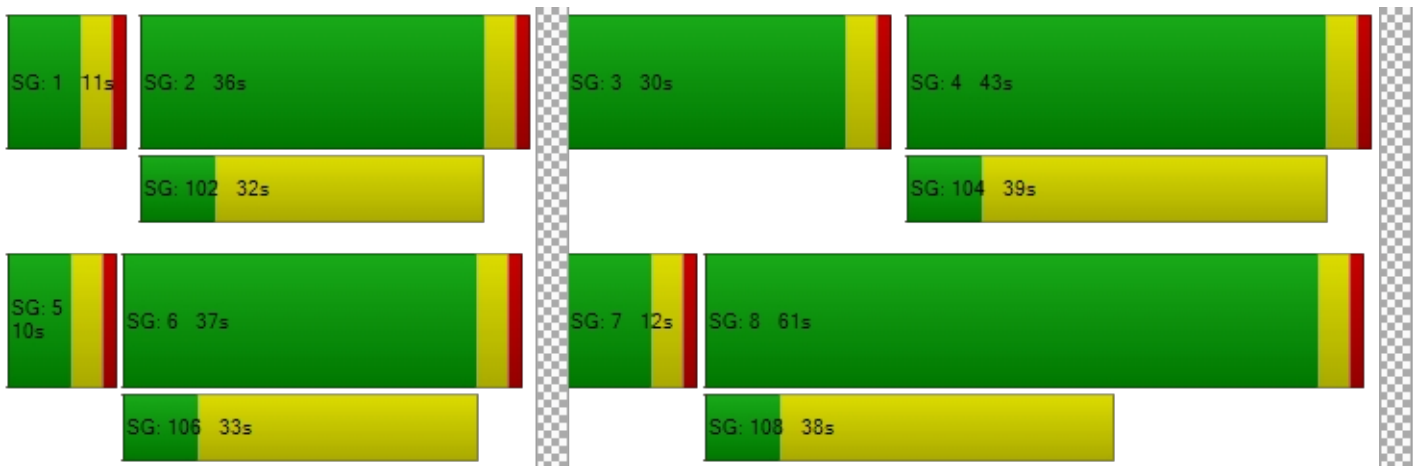
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 96.1  | 35.5 | 0.00 | 63.8  | 62.1 | 61.7 | 63.9  | 18.1 | 21.2 | 70.7  | 12.7 | 12.8 |
| Movement LOS                    | F     | D    |      | E     | E    | E    | E     | B    | C    | E     | B    | B    |
| d_A, Approach Delay [s/veh]     | 79.41 |      |      | 62.35 |      |      | 20.23 |      |      | 32.50 |      |      |
| Approach LOS                    | E     |      |      | E     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 37.09 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.717 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.700 | 2.387 | 2.930 | 2.922 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 950   | 650   | 533   | 550   |
| d_b, Bicycle Delay [s]                                     | 16.55 | 27.35 | 32.28 | 31.55 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.020 | 1.708 | 2.395 | 1.865 |
| Bicycle LOS  | B     | A     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 3.4   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.536 |

**Intersection Setup**

| Name                         | Santa Fe Road |      |      | Santa Fe Road |      |      | Ca Ca     |      |      | Ca Ca     |      |      |
|------------------------------|---------------|------|------|---------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound    |      |      | Southbound    |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |               |      |      |               |      |      |           |      |      |           |      |      |
| Lane Configuration           |               |      |      |               |      |      |           |      |      |           |      |      |
| Turning Movement             | Left          | Thru | Righ | Left          | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0          | 12.0 | 12.0 | 12.0          | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0             | 0    | 0    | 0             | 0    | 0    | 1         | 0    | 0    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.          | 100. | 100. | 100.          | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0             | 0    | 0    | 0             | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00          | 0.00 | 0.00 | 0.00          | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00         |      |      | 30.00         |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00          |      |      | 0.00          |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No            |      |      | No            |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes           |      |      | Yes           |      |      | No        |      |      | Yes       |      |      |

**Volumes**

| Name   | Santa Fe Road |      |      | Santa Fe Road |      |      | Ca Ca |      |      | Ca Ca |      |      |
|--|---------------|------|------|---------------|------|------|-------|------|------|-------|------|------|
|  |               |      |      |               |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 11            | 0    | 2    | 0             | 0    | 16   | 1     | 179  | 2    | 1     | 456  | 8    |
| Base Volume Adjustment Factor                                  | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00          | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 11            | 0    | 2    | 0             | 0    | 16   | 1     | 179  | 2    | 1     | 456  | 8    |
| Peak Hour Factor   | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 3             | 0    | 1    | 0             | 0    | 4    | 0     | 450  | 1    | 0     | 114  | 2    |
| Total Analysis Volume [veh/h]                                  | 11            | 0    | 2    | 0             | 0    | 16   | 1     | 179  | 2    | 1     | 456  | 8    |
| Presence of On-Street Parking                                  | No            |      | No   | No            |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 0    | 4    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 0    | 6    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 0    | 30   | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 0.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 0.0  | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 35   | 0    | 0    | 0    | 35   | 10   | 75   | 0    | 10   | 75   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 0.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 24   | 0    | 0    | 0    | 0    | 0    | 17   | 0    | 0    | 19   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      |      | No   |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 0.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 0.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      |      | No   | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      |      | No   | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      |      | No   | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | R     | L    | C    | C    | L    | C    | R    |
|---|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 3     | 3     | 0    | 105  | 105  | 0    | 105  | 105  |
| g / C, Green / Cycle                    | 0.02  | 0.02  | 0.00 | 0.88 | 0.88 | 0.00 | 0.88 | 0.88 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.01  | 0.00 | 0.47 | 0.47 | 0.00 | 0.12 | 0.00 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 180  | 190  | 190  | 190  | 380  | 190  |
| c, Capacity [veh/h]                     | 93    | 40    | 4    | 166  | 166  | 4    | 333  | 166  |
| d1, Uniform Delay [s]                   | 57.90 | 57.97 | 59.7 | 1.73 | 1.73 | 59.7 | 1.04 | 0.91 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.67  | 6.31  | 32.8 | 1.26 | 1.26 | 29.3 | 0.09 | 0.01 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.14  | 0.40  | 0.26 | 0.54 | 0.54 | 0.25 | 0.14 | 0.00 |
| d, Delay for Lane Group [s/veh]       | 58.57 | 64.28 | 92.6 | 2.99 | 2.99 | 89.0 | 1.12 | 0.92 |
| Lane Group LOS                        | E     | E     | F    | A    | A    | F    | A    | A    |
| Critical Lane Group                   | No    | Yes   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.41  | 0.55  | 0.07 | 2.65 | 2.65 | 0.06 | 0.35 | 0.01 |
| 50th-Percentile Queue Length [ft/ln]  | 10.17 | 13.76 | 1.63 | 66.2 | 66.2 | 1.58 | 8.81 | 0.30 |
| 95th-Percentile Queue Length [veh/ln] | 0.73  | 0.99  | 0.12 | 4.77 | 4.77 | 0.11 | 0.63 | 0.02 |
| 95th-Percentile Queue Length [ft/ln]  | 18.31 | 24.76 | 2.94 | 119. | 119. | 2.84 | 15.8 | 0.55 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 58.5  | 58.5 | 58.5 | 0.00  | 0.00 | 64.2 | 92.6 | 2.99 | 2.99 | 89.0 | 1.12 | 0.92 |
| Movement LOS                    | E     | E    | E    |       |      | E    | F    | A    | A    | F    | A    | A    |
| d_A, Approach Delay [s/veh]     | 58.57 |      |      | 64.28 |      |      | 3.04 |      |      | 1.31 |      |      |
| Approach LOS                    | E     |      |      | E     |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 3.43  |      |      |       |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |      |       |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.536 |      |      |       |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.50 | 49.50 | 0.00  | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.736 | 1.741 | 0.000 | 2.835 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 517   | 517   | 1184  | 1184  |
| d_b, Bicycle Delay [s]                                     | 33.00 | 33.00 | 10.00 | 10.00 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.581 | 1.560 | 3.045 | 1.943 |
| Bicycle LOS  | A     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 35.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.849 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     |            |      |      |            |      |      |              |      |      |              |      |      |
| Lane Configuration           | K O O R    |      |      | K O O R    |      |      | K O O R      |      |      | K O O R      |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | St Co |      |      | St Co |      |      | Birch Street |      |      | Birch Street |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 157   | 456  | 188  | 374   | 415  | 346  | 305          | 863  | 173  | 171          | 109  | 713  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 157   | 456  | 188  | 374   | 415  | 346  | 305          | 863  | 173  | 171          | 109  | 713  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 39    | 114  | 47   | 94    | 104  | 87   | 76           | 216  | 43   | 43           | 273  | 178  |
| Total Analysis Volume [veh/h]                                  | 157   | 456  | 188  | 374   | 415  | 346  | 305          | 863  | 173  | 171          | 109  | 713  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 39   | 0    | 19   | 48   | 0    | 15   | 41   | 0    | 11   | 37   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 28   | 0    | 0    | 30   | 0    | 0    | 28   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | R    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6    | 19   | 19   | 14   | 27   | 27   | 11   | 54   | 54   | 7    | 50   | 50   |
| g / C, Green / Cycle                    | 0.05 | 0.18 | 0.18 | 0.13 | 0.25 | 0.25 | 0.10 | 0.49 | 0.49 | 0.06 | 0.45 | 0.45 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.12 | 0.10 | 0.11 | 0.22 | 0.18 | 0.09 | 0.23 | 0.09 | 0.05 | 0.29 | 0.38 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 190  | 190  | 350  | 380  | 190  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 194  | 670  | 335  | 439  | 468  | 468  | 352  | 185  | 928  | 225  | 171  | 860  |
| d1, Uniform Delay [s]                   | 51.4 | 42.4 | 41.4 | 47.1 | 40.0 | 38.2 | 48.7 | 18.6 | 15.8 | 50.6 | 23.1 | 26.4 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 7.86 | 1.23 | 1.47 | 4.79 | 5.84 | 2.31 | 6.47 | 0.84 | 0.44 | 5.18 | 1.81 | 9.10 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.81 | 0.68 | 0.56 | 0.85 | 0.89 | 0.74 | 0.87 | 0.46 | 0.19 | 0.76 | 0.64 | 0.83 |
| d, Delay for Lane Group [s/veh]       | 59.2 | 43.6 | 42.9 | 51.9 | 45.8 | 40.5 | 55.2 | 19.4 | 16.2 | 55.8 | 24.9 | 35.5 |
| Lane Group LOS                        | E    | D    | D    | D    | D    | D    | E    | B    | B    | E    | C    | D    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 2.35 | 5.89 | 4.79 | 5.29 | 5.73 | 8.83 | 4.43 | 7.32 | 2.54 | 2.47 | 11.0 | 17.9 |
| 50th-Percentile Queue Length [ft/ln]  | 58.7 | 147. | 119. | 132. | 143. | 220. | 110. | 182. | 63.3 | 61.8 | 275. | 448. |
| 95th-Percentile Queue Length [veh/ln] | 4.23 | 9.87 | 8.38 | 9.06 | 9.66 | 13.7 | 7.88 | 11.7 | 4.56 | 4.45 | 16.4 | 24.9 |
| 95th-Percentile Queue Length [ft/ln]  | 105. | 246. | 209. | 226. | 241. | 342. | 197. | 293. | 114. | 111. | 412. | 622. |

**Movement, Approach, & Intersection Results**

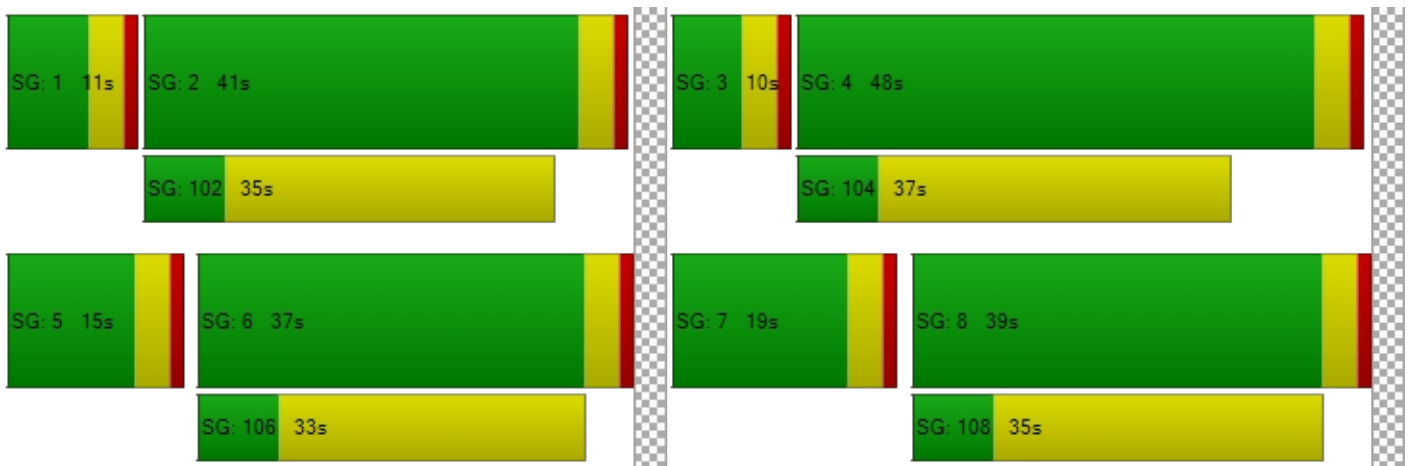
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 59.2  | 43.6 | 42.9 | 51.9  | 45.8 | 40.5 | 55.2  | 19.4 | 16.2 | 55.8  | 24.9 | 35.5 |
| Movement LOS                    | E     | D    | D    | D     | D    | D    | E     | B    | B    | E     | C    | D    |
| d_A, Approach Delay [s/veh]     | 46.56 |      |      | 46.24 |      |      | 27.19 |      |      | 31.45 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 35.86 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.849 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 44.58 | 44.58 | 44.58 | 44.58 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.821 | 2.967 | 3.013 | 3.077 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 636   | 800   | 672   | 600   |
| d_b, Bicycle Delay [s]                                     | 25.59 | 19.82 | 24.25 | 26.97 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.220 | 2.496 | 2.666 | 3.191 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 27.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.742 |

**Intersection Setup**

| Name                         | S As       |      |      | S As       |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T        |      |      | T T          |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | S As |      |      | S As |      |      | Birch Street |      |      | Birch Street |      |      |
|--|------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|  |      |      |      |      |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 532  | 35   | 396  | 11   | 22   | 10   | 16           | 101  | 332  | 324          | 141  | 18   |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 532  | 35   | 396  | 11   | 22   | 10   | 16           | 101  | 332  | 324          | 141  | 18   |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 133  | 9    | 99   | 3    | 6    | 3    | 4            | 254  | 83   | 81           | 354  | 5    |
| Total Analysis Volume [veh/h]                                  | 532  | 35   | 396  | 11   | 22   | 10   | 16           | 101  | 332  | 324          | 141  | 18   |
| Presence of On-Street Parking                                  | No   |      | No   | No   |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Ove  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 8    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      | 1,8  |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 6    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 30   | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 28   | 65   | 65   | 0    | 37   | 0    | 10   | 38   | 0    | 17   | 45   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 7    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 26   | 26   | 0    | 26   | 0    | 0    | 27   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   | No   |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   | No   |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   | No   |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L     | C     | L    | C    | C    | L    | C    | C    |
|---|------|------|------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 0.00 | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 21   | 29   | 46   | 5     | 5     | 3    | 66   | 66   | 13   | 76   | 76   |
| g / C, Green / Cycle                    | 0.17 | 0.24 | 0.38 | 0.04  | 0.04  | 0.02 | 0.55 | 0.55 | 0.11 | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.15 | 0.02 | 0.21 | 0.01  | 0.02  | 0.01 | 0.37 | 0.34 | 0.09 | 0.38 | 0.38 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 1800  | 1900  | 180  | 190  | 190  | 350  | 190  | 190  |
| c, Capacity [veh/h]                     | 600  | 462  | 732  | 77    | 73    | 38   | 104  | 104  | 380  | 120  | 120  |
| d1, Uniform Delay [s]                   | 48.5 | 35.0 | 28.6 | 55.82 | 56.43 | 58.0 | 19.3 | 18.6 | 52.5 | 12.8 | 12.8 |
| k, delay calibration                    | 0.11 | 0.11 | 0.33 | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.64 | 0.07 | 1.89 | 0.84  | 4.07  | 7.21 | 3.45 | 2.82 | 5.47 | 2.16 | 2.15 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |       |       |      |      |      |      |      |      |
|---------------------------------------|------|------|------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.89 | 0.08 | 0.54 | 0.14  | 0.44  | 0.42 | 0.67 | 0.62 | 0.85 | 0.59 | 0.59 |
| d, Delay for Lane Group [s/veh]       | 53.2 | 35.0 | 30.5 | 56.66 | 60.50 | 65.2 | 22.8 | 21.4 | 58.0 | 14.9 | 14.9 |
| Lane Group LOS                        | D    | D    | C    | E     | E     | E    | C    | C    | E    | B    | B    |
| Critical Lane Group                   | No   | No   | Yes  | No    | No    | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 8.15 | 0.81 | 9.20 | 0.34  | 1.03  | 0.56 | 14.4 | 12.8 | 5.08 | 11.4 | 11.3 |
| 50th-Percentile Queue Length [ft/ln]  | 203. | 20.1 | 230. | 8.52  | 25.81 | 13.9 | 361. | 320. | 126. | 284. | 284. |
| 95th-Percentile Queue Length [veh/ln] | 12.8 | 1.45 | 14.1 | 0.61  | 1.86  | 1.00 | 20.6 | 18.7 | 8.78 | 16.9 | 16.9 |
| 95th-Percentile Queue Length [ft/ln]  | 320. | 36.2 | 354. | 15.34 | 46.45 | 25.0 | 517. | 467. | 219. | 423. | 422. |

**Movement, Approach, & Intersection Results**

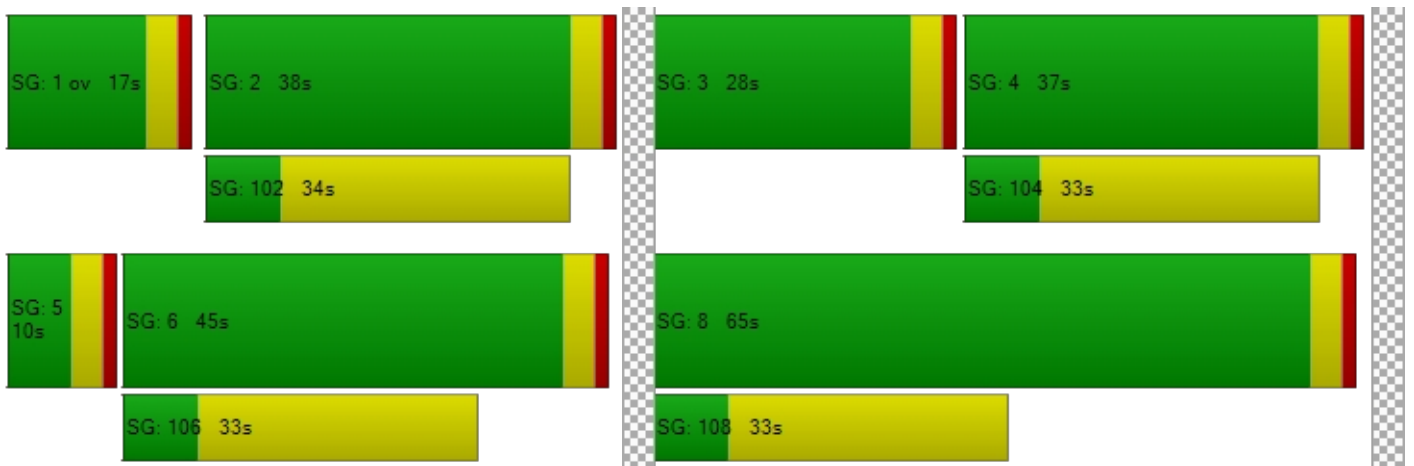
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 53.2  | 35.0 | 30.5 | 56.6  | 60.5 | 60.5 | 65.2  | 22.4 | 21.4 | 58.0  | 14.9 | 14.9 |
| Movement LOS                    | D     | D    | C    | E     | E    | E    | E     | C    | C    | E     | B    | B    |
| d_A, Approach Delay [s/veh]     | 43.24 |      |      | 59.52 |      |      | 22.67 |      |      | 22.89 |      |      |
| Approach LOS                    | D     |      |      | E     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 27.95 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.742 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.733 | 1.990 | 2.962 | 3.000 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1017  | 550   | 567   | 683   |
| d_b, Bicycle Delay [s]                                     | 14.51 | 31.54 | 30.82 | 26.01 |
| I_b,int, Bicycle LOS Score for Intersection                | 3.149 | 1.631 | 2.686 | 3.011 |
| Bicycle LOS  | C     | A     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.808 |

**Intersection Setup**

| Name                         | N As       |      |      | N As       |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Approach   |      |      |            |      |      | Approach     |      |      |              |      |      |
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram]    |      |      | [Diagram]    |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name   | N As |      |      | N As |      |      | Birch Street |      |      | Birch Street |      |      |
|--|------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|  | 14   | 2    | 11   | 113  | 3    | 319  | 306          | 107  | 13   | 6            | 146  | 149  |
| Base Volume Input [veh/h]                                      | 14   | 2    | 11   | 113  | 3    | 319  | 306          | 107  | 13   | 6            | 146  | 149  |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 14   | 2    | 11   | 113  | 3    | 319  | 306          | 107  | 13   | 6            | 146  | 149  |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 4    | 1    | 3    | 28   | 1    | 80   | 77           | 268  | 3    | 2            | 366  | 37   |
| Total Analysis Volume [veh/h]                                  | 14   | 2    | 11   | 113  | 3    | 319  | 306          | 107  | 13   | 6            | 146  | 149  |
| Presence of On-Street Parking                                  | No   |      | No   | No   |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Ove  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5  |      |      |      |      |      |      |
| Lead / Lag                   | -     | -     | -     | -     | -     | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30   | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34   | 39   | 61   | 0    | 10   | 32   | 0    |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23   | 0    | 18   | 0    | 0    | 21   | 0    |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |       | No    |       |       | No    |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |       | No    |       |       | No    | No   | No   | No   |      | No   | No   |      |
| Maximum Recall               |       | No    |       |       | No    | No   | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |       | No    |       |       | No    | No   | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | C    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 4    | 4    | 4    | 16   | 16   | 50   | 22   | 78   | 78   | 1    | 57   | 57   |
| g / C, Green / Cycle                    | 0.03 | 0.03 | 0.03 | 0.14 | 0.14 | 0.44 | 0.20 | 0.68 | 0.68 | 0.01 | 0.49 | 0.49 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.00 | 0.01 | 0.03 | 0.03 | 0.17 | 0.17 | 0.29 | 0.28 | 0.00 | 0.39 | 0.08 |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 180  | 190  | 180  | 190  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 92   | 59   | 59   | 252  | 252  | 829  | 352  | 129  | 129  | 18   | 187  | 939  |
| d1, Uniform Delay [s]                   | 54.4 | 54.0 | 54.3 | 44.0 | 44.0 | 21.9 | 44.8 | 8.25 | 8.24 | 56.5 | 23.9 | 15.9 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.19 | 0.13 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.75 | 0.23 | 1.50 | 0.46 | 0.46 | 0.51 | 7.81 | 1.00 | 1.00 | 10.1 | 3.28 | 0.36 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.15 | 0.03 | 0.19 | 0.23 | 0.23 | 0.39 | 0.87 | 0.42 | 0.42 | 0.33 | 0.78 | 0.16 |
| d, Delay for Lane Group [s/veh]       | 55.1 | 54.3 | 55.8 | 44.4 | 44.4 | 22.5 | 52.6 | 9.25 | 9.24 | 66.7 | 27.2 | 16.3 |
| Lane Group LOS                        | E    | D    | E    | D    | D    | C    | D    | A    | A    | E    | C    | B    |
| Critical Lane Group                   | Yes  | No   | No   | No   | No   | Yes  | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.42 | 0.06 | 0.34 | 1.50 | 1.51 | 5.93 | 9.18 | 5.92 | 5.89 | 0.22 | 16.6 | 2.24 |
| 50th-Percentile Queue Length [ft/ln]  | 10.3 | 1.50 | 8.39 | 37.6 | 37.7 | 148. | 229. | 147. | 147. | 5.61 | 416. | 55.9 |
| 95th-Percentile Queue Length [veh/ln] | 0.75 | 0.11 | 0.60 | 2.71 | 2.72 | 9.92 | 14.1 | 9.91 | 9.87 | 0.40 | 23.3 | 4.03 |
| 95th-Percentile Queue Length [ft/ln]  | 18.7 | 2.70 | 15.0 | 67.7 | 67.8 | 247. | 353. | 247. | 246. | 10.1 | 583. | 100. |

**Movement, Approach, & Intersection Results**

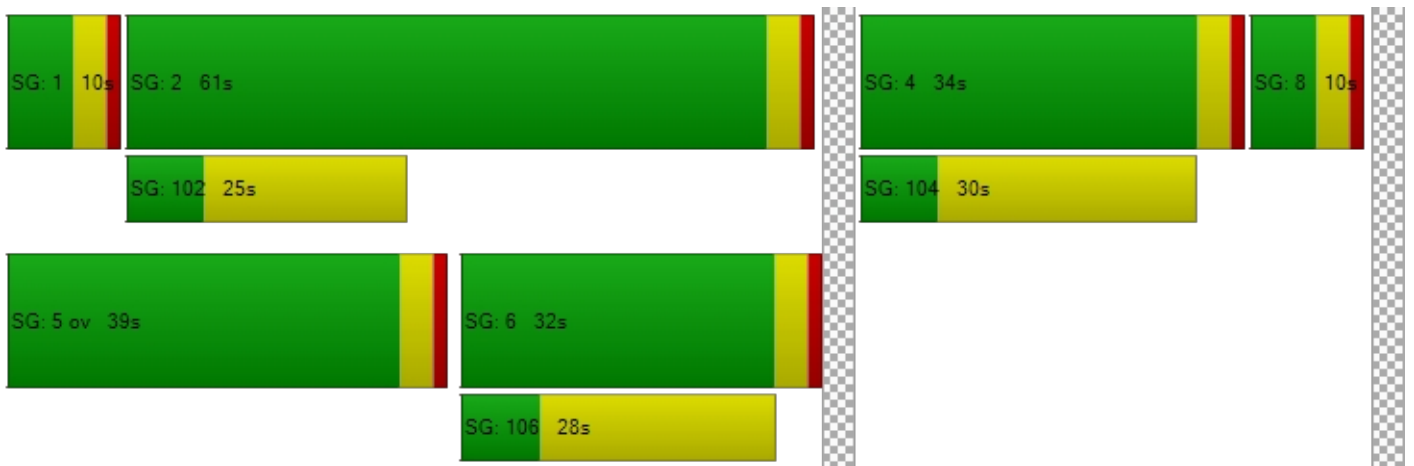
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 55.1  | 54.3 | 55.8 | 44.4  | 44.4 | 22.5 | 52.6  | 9.25 | 9.24 | 66.7  | 27.2 | 16.3 |
| Movement LOS                    | E     | D    | E    | D     | D    | C    | D     | A    | A    | E     | C    | B    |
| d_A, Approach Delay [s/veh]     | 55.38 |      |      | 28.36 |      |      | 18.81 |      |      | 26.36 |      |      |
| Approach LOS                    | E     |      |      | C     |      |      | B     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 23.82 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.808 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 47.05 | 47.05 | 47.05 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.155 | 2.360 | 2.953 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 104   | 522   | 991   | 487   |
| d_b, Bicycle Delay [s]                                     | 51.68 | 31.43 | 14.64 | 32.93 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.604 | 2.277 | 2.706 | 2.896 |
| Bicycle LOS  | A     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 47.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.735 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T          |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |



**Volumes**

| Name   | Kr Bo |      |      | Kr Bo |      |      | Birch Street |      |      | Birch Street |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 642   | 841  | 141  | 239   | 434  | 132  | 254          | 839  | 317  | 87           | 804  | 234  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 642   | 841  | 141  | 239   | 434  | 132  | 254          | 839  | 317  | 87           | 804  | 234  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 161   | 210  | 35   | 60    | 109  | 33   | 64           | 210  | 79   | 22           | 201  | 59   |
| Total Analysis Volume [veh/h]                                  | 642   | 841  | 141  | 239   | 434  | 132  | 254          | 839  | 317  | 87           | 804  | 234  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 24   | 47   | 0    | 14   | 37   | 0    | 20   | 45   | 0    | 14   | 39   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 26   | 0    | 0    | 26   | 0    | 0    | 28   | 0    | 0    | 28   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L    | C    | R    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 20   | 25   | 25   | 10   | 15   | 15   | 16   | 62   | 62   | 7    | 53   | 53   |
| g / C, Green / Cycle                    | 0.17 | 0.21 | 0.21 | 0.08 | 0.13 | 0.13 | 0.13 | 0.51 | 0.51 | 0.06 | 0.44 | 0.44 |
| (v / s)_i Volume / Saturation Flow Rate | 0.18 | 0.17 | 0.17 | 0.07 | 0.10 | 0.10 | 0.14 | 0.22 | 0.17 | 0.05 | 0.21 | 0.12 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 380  | 190  | 180  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 584  | 792  | 396  | 294  | 477  | 239  | 241  | 194  | 974  | 111  | 167  | 837  |
| d1, Uniform Delay [s]                   | 50.0 | 45.5 | 45.2 | 54.0 | 51.0 | 50.7 | 52.0 | 18.3 | 17.1 | 55.5 | 23.8 | 21.4 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.13 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 51.0 | 2.37 | 4.07 | 5.43 | 3.21 | 5.09 | 45.3 | 0.70 | 0.89 | 11.3 | 0.99 | 0.83 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 1.10 | 0.83 | 0.81 | 0.81 | 0.80 | 0.77 | 1.06 | 0.43 | 0.33 | 0.78 | 0.48 | 0.28 |
| d, Delay for Lane Group [s/veh]       | 101. | 47.8 | 49.3 | 59.5 | 54.2 | 55.8 | 97.3 | 19.0 | 18.0 | 66.8 | 24.8 | 22.2 |
| Lane Group LOS                        | F    | D    | D    | E    | D    | E    | F    | B    | B    | E    | C    | C    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 12.8 | 9.65 | 9.56 | 3.77 | 5.81 | 5.65 | 10.2 | 7.37 | 5.32 | 2.95 | 8.26 | 4.40 |
| 50th-Percentile Queue Length [ft/ln]  | 321. | 241. | 239. | 94.2 | 145. | 141. | 256. | 184. | 132. | 73.6 | 206. | 109. |
| 95th-Percentile Queue Length [veh/ln] | 19.6 | 14.7 | 14.6 | 6.79 | 9.77 | 9.55 | 15.8 | 11.8 | 9.10 | 5.31 | 12.9 | 7.84 |
| 95th-Percentile Queue Length [ft/ln]  | 490. | 368. | 365. | 169. | 244. | 238. | 397. | 295. | 227. | 132. | 324. | 195. |

**Movement, Approach, & Intersection Results**

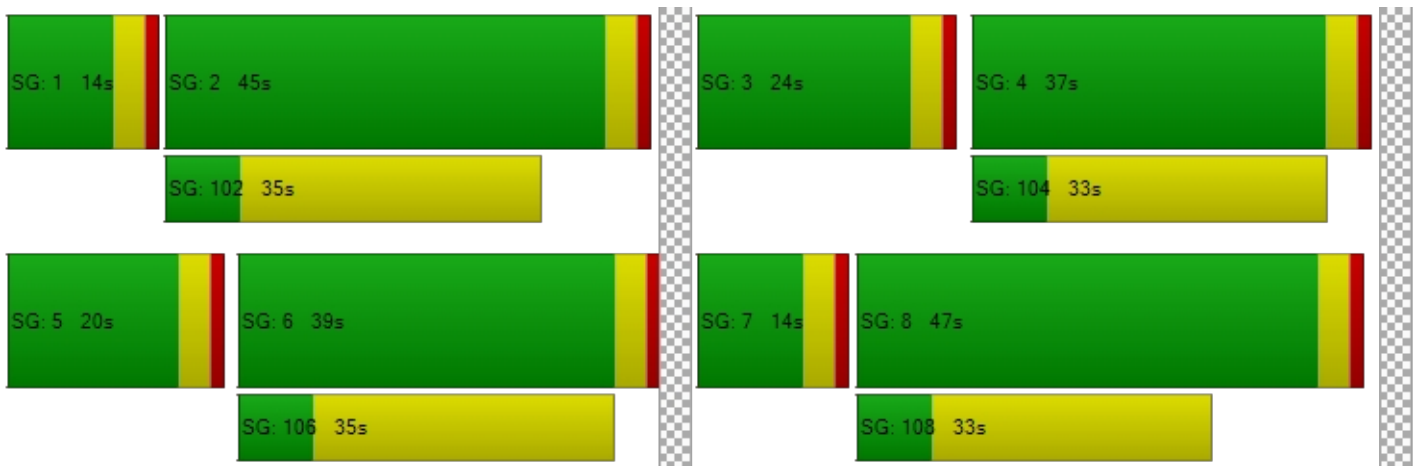
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 101.  | 48.1 | 49.3 | 59.5  | 54.4 | 55.8 | 97.3  | 19.0 | 18.0 | 66.8  | 24.8 | 22.2 |
| Movement LOS                    | F     | D    | D    | E     | D    | E    | F     | B    | B    | E     | C    | C    |
| d_A, Approach Delay [s/veh]     | 69.18 |      |      | 56.18 |      |      | 32.90 |      |      | 27.54 |      |      |
| Approach LOS                    | E     |      |      | E     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 47.33 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.735 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 3.039 | 2.999 | 2.952 | 2.848 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 716   | 550   | 683   | 583   |
| d_b, Bicycle Delay [s]                                     | 24.72 | 31.55 | 26.02 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.453 | 2.002 | 2.723 | 2.488 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 91.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.174 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Birch Street |      |      | Rose Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T        |      |      | T T T      |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1          | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00       |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes        |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Birch Street |      |      | Rose Drive |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|------------|------|------|
|  |       |      |      |       |      |      |              |      |      |            |      |      |
| Base Volume Input [veh/h]                                      | 231   | 679  | 51   | 538   | 295  | 62   | 219          | 718  | 158  | 33         | 550  | 877  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 231   | 679  | 51   | 538   | 295  | 62   | 219          | 718  | 158  | 33         | 550  | 877  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 58    | 170  | 13   | 135   | 74   | 16   | 55           | 180  | 40   | 8          | 138  | 219  |
| Total Analysis Volume [veh/h]                                  | 231   | 679  | 51   | 538   | 295  | 62   | 219          | 718  | 158  | 33         | 550  | 877  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No         |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 33   | 41   | 0    | 32   | 40   | 0    | 10   | 37   | 0    | 10   | 37   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 27   | 0    | 0    | 25   | 0    | 0    | 25   | 0    | 0    | 25   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L    | C    | C    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 18   | 26   | 26   | 28   | 37   | 37   | 6    | 46   | 46   | 4    | 44   | 44   |
| g / C, Green / Cycle                    | 0.15 | 0.22 | 0.22 | 0.23 | 0.31 | 0.31 | 0.05 | 0.38 | 0.38 | 0.03 | 0.36 | 0.36 |
| (v / s)_i Volume / Saturation Flow Rate | 0.13 | 0.19 | 0.19 | 0.30 | 0.10 | 0.09 | 0.06 | 0.24 | 0.22 | 0.02 | 0.14 | 0.46 |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 350  | 190  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 263  | 415  | 415  | 420  | 581  | 581  | 178  | 723  | 723  | 62   | 138  | 692  |
| d1, Uniform Delay [s]                   | 50.2 | 45.5 | 45.2 | 46.0 | 32.0 | 31.8 | 56.9 | 30.2 | 29.6 | 57.0 | 28.3 | 38.1 |
| k, delay calibration                    | 0.11 | 0.19 | 0.17 | 0.50 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 9.14 | 10.7 | 8.71 | 143. | 0.31 | 0.28 | 115. | 4.04 | 3.46 | 7.03 | 0.85 | 131. |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.88 | 0.89 | 0.87 | 1.28 | 0.32 | 0.30 | 1.23 | 0.62 | 0.59 | 0.54 | 0.40 | 1.27 |
| d, Delay for Lane Group [s/veh]       | 59.3 | 56.2 | 53.9 | 189. | 32.3 | 32.1 | 172. | 34.2 | 33.1 | 64.0 | 29.2 | 169. |
| Lane Group LOS                        | E    | E    | D    | F    | C    | C    | F    | C    | C    | E    | C    | F    |
| Critical Lane Group                   | No   | Yes  | No   | Yes  | No   | No   | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 7.45 | 11.8 | 11.3 | 29.1 | 4.18 | 3.90 | 5.54 | 11.3 | 10.3 | 1.11 | 6.05 | 45.2 |
| 50th-Percentile Queue Length [ft/ln]  | 186. | 296. | 282. | 729. | 104. | 97.6 | 138. | 283. | 259. | 27.6 | 151. | 112  |
| 95th-Percentile Queue Length [veh/ln] | 11.9 | 17.5 | 16.8 | 43.3 | 7.52 | 7.03 | 9.92 | 16.8 | 15.6 | 1.99 | 10.0 | 65.2 |
| 95th-Percentile Queue Length [ft/ln]  | 298. | 438. | 420. | 108  | 187. | 175. | 247. | 421. | 391. | 49.7 | 252. | 163  |



**Movement, Approach, & Intersection Results**

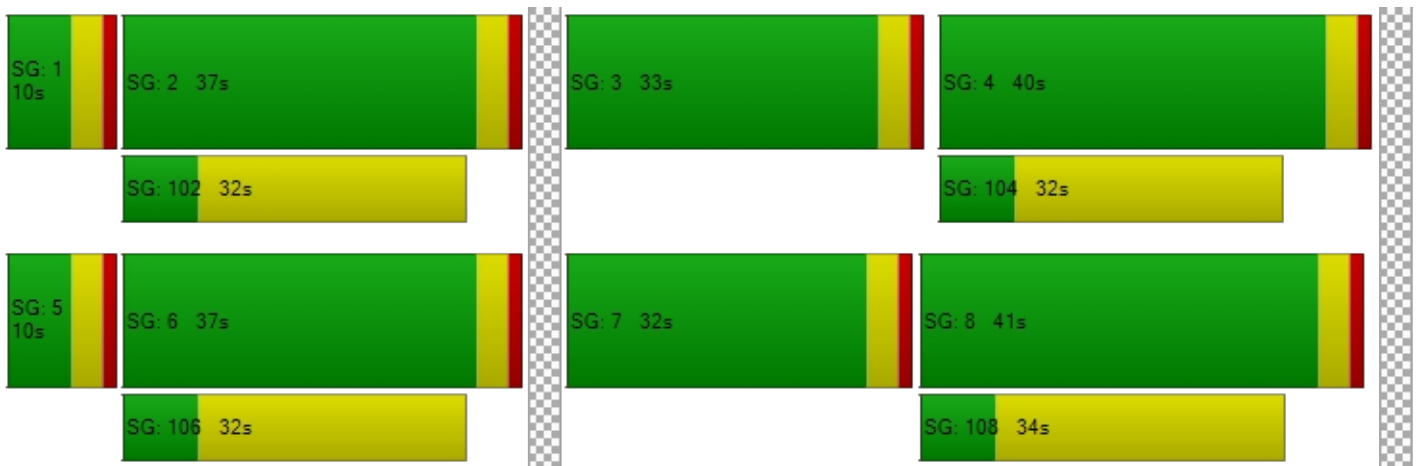
|                                 |       |      |      |        |      |      |       |      |      |        |      |      |
|---------------------------------|-------|------|------|--------|------|------|-------|------|------|--------|------|------|
| d_M, Delay for Movement [s/veh] | 59.3  | 55.2 | 53.9 | 189.   | 32.2 | 32.1 | 172.  | 33.8 | 33.1 | 64.0   | 29.2 | 169. |
| Movement LOS                    | E     | E    | D    | F      | C    | C    | F     | C    | C    | E      | C    | F    |
| d_A, Approach Delay [s/veh]     | 56.14 |      |      | 126.95 |      |      | 61.41 |      |      | 114.37 |      |      |
| Approach LOS                    | E     |      |      | F      |      |      | E     |      |      | F      |      |      |
| d_I, Intersection Delay [s/veh] | 91.09 |      |      |        |      |      |       |      |      |        |      |      |
| Intersection LOS                | F     |      |      |        |      |      |       |      |      |        |      |      |
| Intersection V/C                | 1.174 |      |      |        |      |      |       |      |      |        |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.596 | 2.834 | 2.782 | 2.916 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 617   | 600   | 550   | 550   |
| d_b, Bicycle Delay [s]                                     | 28.72 | 29.41 | 31.55 | 31.55 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.352 | 2.298 | 2.463 | 2.764 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.753 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Lane Configuration           |            |      |      |            |      |      |                |      |      |                |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left           | Thru | Righ | Left           | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0          | 0    | 1    | 1          | 0    | 1    | 0              | 0    | 0    | 1              | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.           | 100. | 100. | 100.           | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00          |      |      | 30.00          |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00           |      |      | 0.00           |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No             |      |      | No             |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes            |      |      | Yes            |      |      |

**Volumes**

| Name   | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|--|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|  |            |      |      |            |      |      |                |      |      |                |      |      |
| Base Volume Input [veh/h]                                      | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 8          | 321  | 8    | 3          | 326  | 4    | 2              | 0    | 5    | 7              | 0    | 3    |
| Total Analysis Volume [veh/h]                                  | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No             |      | No   | No             |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 6    | 0    | 0    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 91   | 0    | 0    | 91   | 0    | 0    | 29   | 0    | 0    | 29   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 7    | 0    | 0    | 14   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 108  | 108  | 108  | 108  | 108  | 108  | 4     | 4     | 4     |
| g / C, Green / Cycle                    | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.04  | 0.04  | 0.04  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.35 | 0.35 | 0.01 | 0.69 | 0.01 | 0.02  | 0.01  | 0.01  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 180  | 1800  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 122  | 170  | 170  | 153  | 170  | 161  | 102   | 68    | 67    |
| d1, Uniform Delay [s]                   | 0.63 | 0.96 | 0.95 | 0.63 | 1.99 | 0.63 | 56.71 | 56.61 | 56.09 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.04 | 0.66 | 0.66 | 0.01 | 3.32 | 0.01 | 1.52  | 3.49  | 1.02  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |       |       |       |
|---------------------------------------|------|------|------|------|------|------|-------|-------|-------|
| X, volume / capacity                  | 0.02 | 0.39 | 0.38 | 0.01 | 0.76 | 0.01 | 0.28  | 0.38  | 0.15  |
| d, Delay for Lane Group [s/veh]       | 0.67 | 1.62 | 1.61 | 0.64 | 5.30 | 0.64 | 58.22 | 60.10 | 57.11 |
| Lane Group LOS                        | A    | A    | A    | A    | A    | A    | E     | E     | E     |
| Critical Lane Group                   | No   | No   | No   | No   | Yes  | No   | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.03 | 0.83 | 0.82 | 0.01 | 3.68 | 0.01 | 0.91  | 0.84  | 0.31  |
| 50th-Percentile Queue Length [ft/ln]  | 0.70 | 20.7 | 20.4 | 0.27 | 92.0 | 0.35 | 22.64 | 20.95 | 7.83  |
| 95th-Percentile Queue Length [veh/ln] | 0.05 | 1.49 | 1.47 | 0.02 | 6.63 | 0.03 | 1.63  | 1.51  | 0.56  |
| 95th-Percentile Queue Length [ft/ln]  | 1.26 | 37.2 | 36.8 | 0.49 | 165. | 0.63 | 40.75 | 37.71 | 14.09 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 0.67  | 1.61 | 1.61 | 0.64 | 5.30  | 0.64 | 58.2  | 58.2 | 58.2 | 60.1 | 57.1 | 57.1 |
| Movement LOS                    | A     | A    | A    | A    | A     | A    | E     | E    | E    | E    | E    | E    |
| d_A, Approach Delay [s/veh]     | 1.59  |      | 5.20 |      | 58.22 |      | 59.27 |      |      |      |      |      |
| Approach LOS                    | A     |      | A    |      | E     |      | E     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 4.70  |      |      |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | A     |      |      |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.753 |      |      |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.48 | 49.48 | 49.48 | 49.48 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.839 | 2.839 | 1.808 | 1.999 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1451  | 1451  | 417   | 417   |
| d_b, Bicycle Delay [s]                                     | 4.53  | 4.53  | 37.58 | 37.58 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.670 | 3.761 | 1.607 | 1.619 |
| Bicycle LOS  | B     | D     | A     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.779 |

**Intersection Setup**

| Name                         |          |      |       | SR-57      |      |       | Im Hi      |      |       | Im Hi     |      |       |           |  |
|------------------------------|----------|------|-------|------------|------|-------|------------|------|-------|-----------|------|-------|-----------|--|
|                              | Approach |      |       | Northbound |      |       | Southbound |      |       | Eastbound |      |       | Westbound |  |
| Lane Configuration           |          |      |       |            |      |       |            |      |       |           |      |       |           |  |
| Turning Movement             | Left     | Thru | Right | Left       | Thru | Right | Left       | Thru | Right | Left      | Thru | Right |           |  |
| Lane Width [ft]              | 12.0     | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |           |  |
| No. of Lanes in Entry Pocket | 0        | 0    | 0     | 1          | 0    | 1     | 0          | 0    | 1     | 0         | 0    | 1     |           |  |
| Entry Pocket Length [ft]     | 100.     | 100. | 100.  | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.      | 100. | 100.  |           |  |
| No. of Lanes in Exit Pocket  | 0        | 0    | 0     | 0          | 0    | 0     | 0          | 0    | 0     | 0         | 0    | 0     |           |  |
| Exit Pocket Length [ft]      | 0.00     | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |           |  |
| Speed [mph]                  | 30.00    |      |       | 30.00      |      |       | 30.00      |      |       | 30.00     |      |       |           |  |
| Grade [%]                    | 0.00     |      |       | 0.00       |      |       | 0.00       |      |       | 0.00      |      |       |           |  |
| Curb Present                 |          |      |       | No         |      |       | No         |      |       | No        |      |       |           |  |
| Crosswalk                    | No       |      |       | Yes        |      |       | No         |      |       | No        |      |       |           |  |

**Volumes**

| Name   |      |      |      | SR-57 |      |      | Im Hi |      |      | Im Hi |      |      |
|--|------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |      |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 0    | 0    | 0    | 735   | 0    | 605  | 0     | 191  | 110  | 0     | 263  | 460  |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 0    | 0    | 0    | 735   | 0    | 605  | 0     | 191  | 110  | 0     | 263  | 460  |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 0    | 0    | 0    | 184   | 0    | 151  | 0     | 478  | 275  | 0     | 658  | 115  |
| Total Analysis Volume [veh/h]                                  | 0    | 0    | 0    | 735   | 0    | 605  | 0     | 191  | 110  | 0     | 263  | 460  |
| Presence of On-Street Parking                                  |      |      |      | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Split | Per  | Split | Per  | Per  | Unsi | Per  | Per  | Unsi |
|------------------------------|------|------|------|-------|------|-------|------|------|------|------|------|------|
| Signal Group                 | 0    | 0    | 0    | 7     | 0    | 0     | 0    | 2    | 0    | 0    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |       |      |       |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | Lea   | -    | -     | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0    | 0    | 0    | 6     | 0    | 0     | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0    | 0    | 0    | 30    | 0    | 0     | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 0.0  | 0.0  | 1.0   | 0.0  | 0.0   | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 0    | 0    | 64    | 0    | 0     | 0    | 26   | 0    | 0    | 26   | 0    |
| Vehicle Extension [s]        | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 15   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| Maximum Recall               |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| Pedestrian Recall            |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | C     | C     |
|---|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 27   | 27   | 27   | 55    | 55    |
| g / C, Green / Cycle                    | 0.30 | 0.30 | 0.30 | 0.61  | 0.61  |
| (v / s)_i Volume / Saturation Flow Rate | 0.25 | 0.25 | 0.24 | 0.34  | 0.46  |
| s, saturation flow rate [veh/h]         | 180  | 180  | 190  | 5700  | 5700  |
| c, Capacity [veh/h]                     | 536  | 536  | 566  | 3495  | 3495  |
| d1, Uniform Delay [s]                   | 29.4 | 29.4 | 28.9 | 10.11 | 12.48 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 3.47 | 3.47 | 2.51 | 0.62  | 1.55  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |        |        |
|---------------------------------------|------|------|------|--------|--------|
| X, volume / capacity                  | 0.83 | 0.83 | 0.79 | 0.55   | 0.75   |
| d, Delay for Lane Group [s/veh]       | 32.9 | 32.9 | 31.4 | 10.73  | 14.03  |
| Lane Group LOS                        | C    | C    | C    | B      | B      |
| Critical Lane Group                   | Yes  | No   | No   | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 9.22 | 9.22 | 8.94 | 6.71   | 11.57  |
| 50th-Percentile Queue Length [ft/ln]  | 230. | 230. | 223. | 167.77 | 289.16 |
| 95th-Percentile Queue Length [veh/ln] | 14.1 | 14.1 | 13.8 | 10.96  | 17.14  |
| 95th-Percentile Queue Length [ft/ln]  | 354. | 354. | 346. | 273.99 | 428.59 |

**Movement, Approach, & Intersection Results**

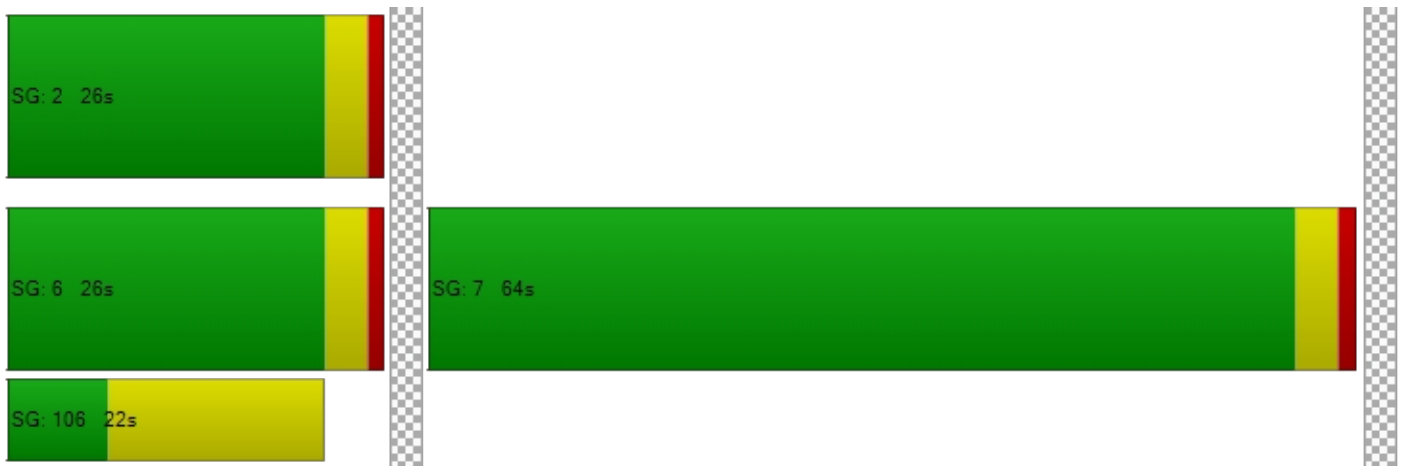
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 32.9  | 0.00 | 31.8 | 0.00  | 10.7 | 0.00 | 0.00  | 14.0 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C    |       | B    |      |       | B    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 32.45 |      |      | 10.73 |      |      | 14.03 |      |      |
| Approach LOS                    | A     |      |      | C     |      |      | B     |      |      | B     |      |      |
| d_I, Intersection Delay [s/veh] | 17.15 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | B     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.779 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 0.000 | 2.457 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                     | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection                | 4.132 | 3.771 | 2.611 | 3.007 |
| Bicycle LOS  | D     | D     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 38.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.855 |

**Intersection Setup**

| Name                         | SR-57      |      |      | Sh Ce      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | ⇐⇐⇐+       |      |      | ⇐⇐         |      |      | ⇐   ⇐     |      |      | ⇐         |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 0          | 0    | 1    | 1         | 0    | 1    | 0         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | No        |      |      | No        |      |      |

**Volumes**

| Name   | SR-57 |      |      | Sh Ce |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 111   | 72   | 495  | 0     | 0    | 217  | 205   | 206  | 410  | 0     | 270  | 43   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 111   | 72   | 495  | 0     | 0    | 217  | 205   | 206  | 410  | 0     | 270  | 43   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 278   | 18   | 124  | 0     | 0    | 54   | 51    | 515  | 103  | 0     | 677  | 11   |
| Total Analysis Volume [veh/h]                                  | 111   | 72   | 495  | 0     | 0    | 217  | 205   | 206  | 410  | 0     | 270  | 43   |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Per  | Split | Prot | Per  | Unsi | Per  | Per  | Per  |
|------------------------------|-------|-------|-------|-------|------|-------|------|------|------|------|------|------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0    | 4     | 5    | 2    | 0    | 0    | 6    | 0    |
| Auxiliary Signal Groups      |       |       |       |       |      |       |      |      |      |      |      |      |
| Lead / Lag                   | -     | -     | -     | -     | -    | -     | Lea  | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0    | 6     | 6    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0    | 30    | 30   | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0  | 3.0   | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0  | 1.0   | 1.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0     | 39    | 0     | 0     | 0    | 12    | 20   | 69   | 0    | 0    | 49   | 0    |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0  | 3.0   | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0    | 0     | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0    | 0     | 0    | 22   | 0    | 0    | 19   | 0    |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |       | No    |       |       |      | No    |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0  | 2.0   | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0  | 2.0   | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |       | No    |       |       |      | No    | No   | No   |      |      | No   |      |
| Maximum Recall               |       | No    |       |       |      | No    | No   | No   |      |      | No   |      |
| Pedestrian Recall            |       | No    |       |       |      | No    | No   | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | R     | L     | C     | C     | C     |
|---|------|------|------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 32   | 32   | 32   | 8     | 15    | 68    | 48    | 48    |
| g / C, Green / Cycle                    | 0.27 | 0.27 | 0.27 | 0.07  | 0.13  | 0.57  | 0.40  | 0.40  |
| (v / s)_i Volume / Saturation Flow Rate | 0.24 | 0.24 | 0.22 | 0.06  | 0.11  | 0.36  | 0.36  | 0.36  |
| s, saturation flow rate [veh/h]         | 350  | 180  | 190  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 934  | 480  | 507  | 255   | 232   | 3228  | 2303  | 768   |
| d1, Uniform Delay [s]                   | 42.2 | 42.2 | 41.5 | 55.41 | 51.39 | 17.68 | 33.41 | 33.41 |
| k, delay calibration                    | 0.11 | 0.32 | 0.29 | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 3.03 | 14.4 | 9.42 | 7.88  | 10.55 | 0.98  | 5.95  | 15.20 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |        |        |        |        |        |
|---------------------------------------|------|------|------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.88 | 0.89 | 0.84 | 0.85   | 0.88   | 0.64   | 0.90   | 0.90   |
| d, Delay for Lane Group [s/veh]       | 45.2 | 56.7 | 51.0 | 63.28  | 61.93  | 18.66  | 39.36  | 48.61  |
| Lane Group LOS                        | D    | E    | D    | E      | E      | B      | D      | D      |
| Critical Lane Group                   | No   | Yes  | No   | Yes    | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 12.0 | 13.9 | 13.1 | 3.53   | 6.73   | 12.75  | 19.58  | 21.55  |
| 50th-Percentile Queue Length [ft/ln]  | 301. | 348. | 328. | 88.16  | 168.29 | 318.75 | 489.39 | 538.69 |
| 95th-Percentile Queue Length [veh/ln] | 17.7 | 20.0 | 19.0 | 6.35   | 10.99  | 18.61  | 26.83  | 29.16  |
| 95th-Percentile Queue Length [ft/ln]  | 443. | 501. | 477. | 158.69 | 274.66 | 465.14 | 670.79 | 729.01 |

**Movement, Approach, & Intersection Results**

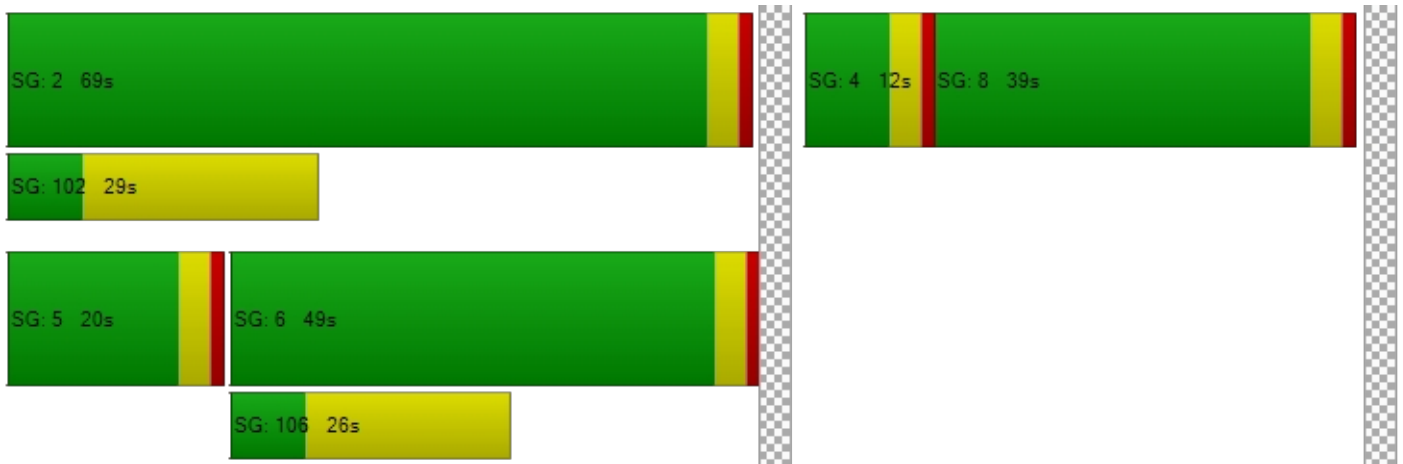
|                                 |       |      |       |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 48.1  | 56.7 | 51.8  | 0.00 | 0.00  | 63.2 | 61.9  | 18.6 | 0.00 | 0.00 | 41.5 | 48.6 |
| Movement LOS                    | D     | E    | D     |      |       | E    | E     | B    |      |      | D    | D    |
| d_A, Approach Delay [s/veh]     | 49.63 |      | 63.28 |      | 22.57 |      | 41.67 |      |      |      |      |      |
| Approach LOS                    | D     |      | E     |      | C     |      | D     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 38.02 |      |       |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | D     |      |       |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.855 |      |       |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.51 | 49.51 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.641 | 2.129 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 583   | 133   | 1083  | 750   |
| d_b, Bicycle Delay [s]                                     | 30.11 | 52.27 | 12.61 | 23.44 |
| I_b,int, Bicycle LOS Score for Intersection                | 4.327 | 1.560 | 2.805 | 2.694 |
| Bicycle LOS  | E     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 43.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.906 |

**Intersection Setup**

| Name                         | As Ro      |      |      | As Ro      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |            |      |      |            |      |      |           |      |      |           |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T     |      |      | T T T     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name   | As Ro |      |      | As Ro |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 240   | 295  | 93   | 320   | 389  | 280  | 296   | 210  | 153  | 192   | 198  | 203  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 240   | 295  | 93   | 320   | 389  | 280  | 296   | 210  | 153  | 192   | 198  | 203  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 60    | 74   | 23   | 80    | 97   | 70   | 74    | 526  | 38   | 48    | 497  | 51   |
| Total Analysis Volume [veh/h]                                  | 240   | 295  | 93   | 320   | 389  | 280  | 296   | 210  | 153  | 192   | 198  | 203  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 13   | 39   | 0    | 20   | 46   | 0    | 25   | 44   | 0    | 17   | 36   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 28   | 0    | 0    | 29   | 0    | 0    | 26   | 0    | 0    | 25   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | L    | C    | C    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 9    | 23   | 23   | 13   | 27   | 27   | 21   | 55   | 55   | 13   | 47   | 47   |
| g / C, Green / Cycle                    | 0.08 | 0.19 | 0.19 | 0.11 | 0.23 | 0.23 | 0.18 | 0.45 | 0.45 | 0.11 | 0.39 | 0.39 |
| (v / s)_i Volume / Saturation Flow Rate | 0.07 | 0.11 | 0.10 | 0.09 | 0.20 | 0.15 | 0.16 | 0.39 | 0.41 | 0.11 | 0.29 | 0.30 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 350  | 190  | 190  | 180  | 380  | 190  | 180  | 570  | 190  |
| c, Capacity [veh/h]                     | 265  | 371  | 371  | 383  | 435  | 435  | 315  | 172  | 862  | 196  | 220  | 735  |
| d1, Uniform Delay [s]                   | 55.0 | 43.5 | 43.1 | 52.4 | 44.8 | 41.8 | 48.8 | 29.4 | 30.1 | 53.3 | 31.5 | 32.0 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.16 | 0.11 | 0.20 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 11.2 | 1.24 | 1.06 | 4.85 | 9.18 | 1.60 | 20.1 | 6.03 | 13.6 | 25.4 | 2.25 | 7.49 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.91 | 0.54 | 0.50 | 0.84 | 0.89 | 0.64 | 0.94 | 0.86 | 0.89 | 0.98 | 0.74 | 0.77 |
| d, Delay for Lane Group [s/veh]       | 66.3 | 44.7 | 44.2 | 57.2 | 54.0 | 43.4 | 69.0 | 35.5 | 43.7 | 78.8 | 33.8 | 39.5 |
| Lane Group LOS                        | E    | D    | D    | E    | D    | D    | E    | D    | D    | E    | C    | D    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 4.01 | 5.52 | 5.07 | 4.98 | 12.2 | 7.69 | 10.4 | 20.1 | 23.0 | 7.15 | 13.7 | 15.5 |
| 50th-Percentile Queue Length [ft/ln]  | 100. | 137. | 126. | 124. | 306. | 192. | 262. | 504. | 577. | 178. | 344. | 389. |
| 95th-Percentile Queue Length [veh/ln] | 7.22 | 9.37 | 8.77 | 8.64 | 18.0 | 12.2 | 15.8 | 27.5 | 30.9 | 11.5 | 19.8 | 22.0 |
| 95th-Percentile Queue Length [ft/ln]  | 180. | 234. | 219. | 216. | 450. | 306. | 394. | 688. | 774. | 288. | 496. | 551. |

**Movement, Approach, & Intersection Results**

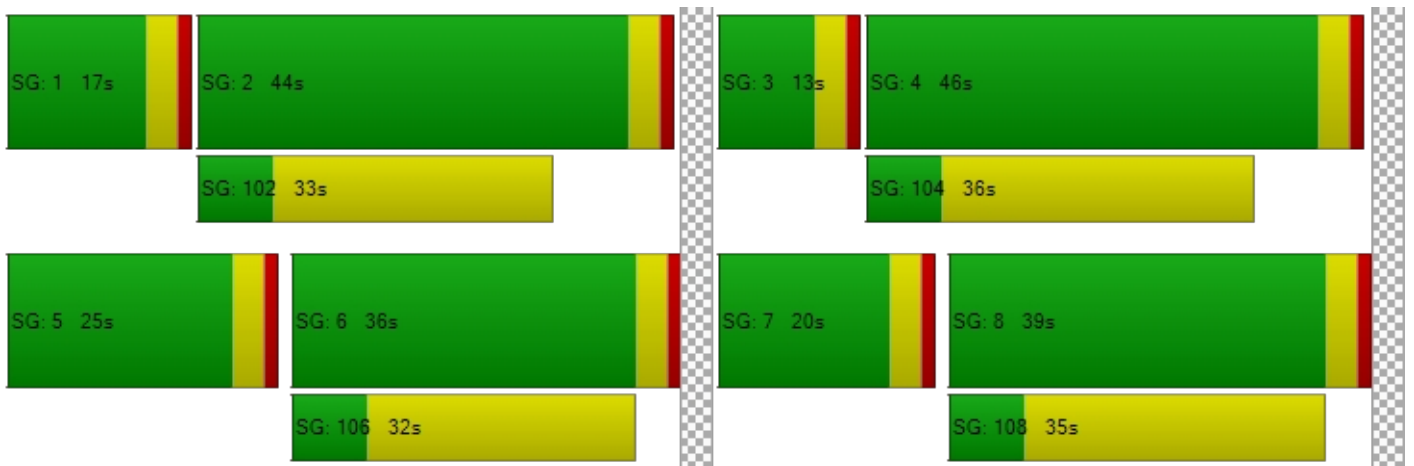
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 66.3  | 44.5 | 44.2 | 57.2  | 54.0 | 43.4 | 69.0  | 37.9 | 43.7 | 78.8  | 34.8 | 39.5 |
| Movement LOS                    | E     | D    | D    | E     | D    | D    | E     | D    | D    | E     | C    | D    |
| d_A, Approach Delay [s/veh]     | 52.82 |      |      | 52.11 |      |      | 41.89 |      |      | 38.80 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | D     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 43.35 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.906 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.579 | 2.756 | 3.356 | 3.337 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 583   | 700   | 666   | 533   |
| d_b, Bicycle Delay [s]                                     | 30.12 | 25.36 | 26.68 | 32.28 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.078 | 3.191 | 2.964 | 2.543 |
| Bicycle LOS  | B     | C     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.830 |

**Intersection Setup**

| Name                         | PI Av      |      |       | Castlegate Lane |      |       | Im Hi     |      |       | Im Hi     |      |       |
|------------------------------|------------|------|-------|-----------------|------|-------|-----------|------|-------|-----------|------|-------|
|                              | Northbound |      |       | Southbound      |      |       | Eastbound |      |       | Westbound |      |       |
| Approach                     | Northbound |      |       | Southbound      |      |       | Eastbound |      |       | Westbound |      |       |
| Lane Configuration           |            |      |       |                 |      |       |           |      |       |           |      |       |
| Turning Movement             | Left       | Thru | Right | Left            | Thru | Right | Left      | Thru | Right | Left      | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0            | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  | 12.0      | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1     | 1               | 0    | 0     | 1         | 0    | 1     | 1         | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.            | 100. | 100.  | 100.      | 100. | 100.  | 100.      | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0               | 0    | 0     | 0         | 0    | 0     | 0         | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00            | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  | 0.00      | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00           |      |       | 30.00     |      |       | 30.00     |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00            |      |       | 0.00      |      |       | 0.00      |      |       |
| Curb Present                 | No         |      |       | No              |      |       | No        |      |       | No        |      |       |
| Crosswalk                    | Yes        |      |       | Yes             |      |       | No        |      |       | Yes       |      |       |

**Volumes**

| Name   | Pl Av |      |      | Castlegate Lane |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-----------------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |                 |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 276   | 51   | 295  | 28              | 25   | 15   | 21    | 212  | 308  | 255   | 217  | 63   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00            | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 276   | 51   | 295  | 28              | 25   | 15   | 21    | 212  | 308  | 255   | 217  | 63   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 69    | 13   | 74   | 7               | 6    | 4    | 5     | 531  | 77   | 64    | 544  | 16   |
| Total Analysis Volume [veh/h]                                  | 276   | 51   | 295  | 28              | 25   | 15   | 21    | 212  | 308  | 255   | 217  | 63   |
| Presence of On-Street Parking                                  | No    |      | No   | No              |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |       |       |       |       |       |       |      |      |      |      |      |      |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0     | 26    | 0     | 0     | 10    | 0     | 10   | 32   | 0    | 27   | 49   | 0    |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0    | 21   | 0    | 0    | 14   | 0    |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |       | No    |       |       | No    |       |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |       | No    |       |       | No    |       | No   | No   |      | No   | No   |      |
| Maximum Recall               |       | No    |       |       | No    |       | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |       | No    |       |       | No    |       | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L     | C     | L    | C    | R    | L    | C    | C    |
|---|------|------|------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 95   | 95   | 95   | 95    | 95    | 95   | 95   | 95   | 95   | 95   | 95   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 17   | 17   | 17   | 5     | 5     | 3    | 41   | 41   | 16   | 54   | 54   |
| g / C, Green / Cycle                    | 0.18 | 0.18 | 0.18 | 0.05  | 0.05  | 0.03 | 0.43 | 0.43 | 0.16 | 0.57 | 0.57 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.09 | 0.16 | 0.02  | 0.02  | 0.01 | 0.37 | 0.16 | 0.14 | 0.39 | 0.40 |
| s, saturation flow rate [veh/h]         | 180  | 180  | 190  | 1800  | 1900  | 180  | 570  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 327  | 327  | 346  | 97    | 102   | 51   | 246  | 821  | 295  | 215  | 107  |
| d1, Uniform Delay [s]                   | 35.0 | 35.0 | 37.6 | 43.27 | 43.51 | 45.4 | 24.4 | 18.3 | 38.7 | 14.5 | 14.9 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.16 | 1.19 | 6.00 | 1.62  | 2.42  | 5.31 | 4.26 | 1.31 | 7.46 | 1.77 | 3.98 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |       |       |      |      |      |      |      |      |
|---------------------------------------|------|------|------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.50 | 0.50 | 0.85 | 0.29  | 0.39  | 0.41 | 0.86 | 0.38 | 0.86 | 0.68 | 0.71 |
| d, Delay for Lane Group [s/veh]       | 36.1 | 36.2 | 43.7 | 44.90 | 45.94 | 50.7 | 28.7 | 19.6 | 46.2 | 16.2 | 18.8 |
| Lane Group LOS                        | D    | D    | D    | D     | D     | D    | C    | B    | D    | B    | B    |
| Critical Lane Group                   | No   | No   | Yes  | No    | Yes   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 3.45 | 3.50 | 7.11 | 0.67  | 0.97  | 0.56 | 14.6 | 4.75 | 6.32 | 10.7 | 12.1 |
| 50th-Percentile Queue Length [ft/ln]  | 86.1 | 87.4 | 177. | 16.82 | 24.32 | 13.9 | 365. | 118. | 157. | 268. | 303. |
| 95th-Percentile Queue Length [veh/ln] | 6.20 | 6.30 | 11.4 | 1.21  | 1.75  | 1.01 | 20.8 | 8.32 | 10.4 | 16.1 | 17.8 |
| 95th-Percentile Queue Length [ft/ln]  | 155. | 157. | 287. | 30.28 | 43.77 | 25.1 | 521. | 207. | 261. | 403. | 446. |

**Movement, Approach, & Intersection Results**

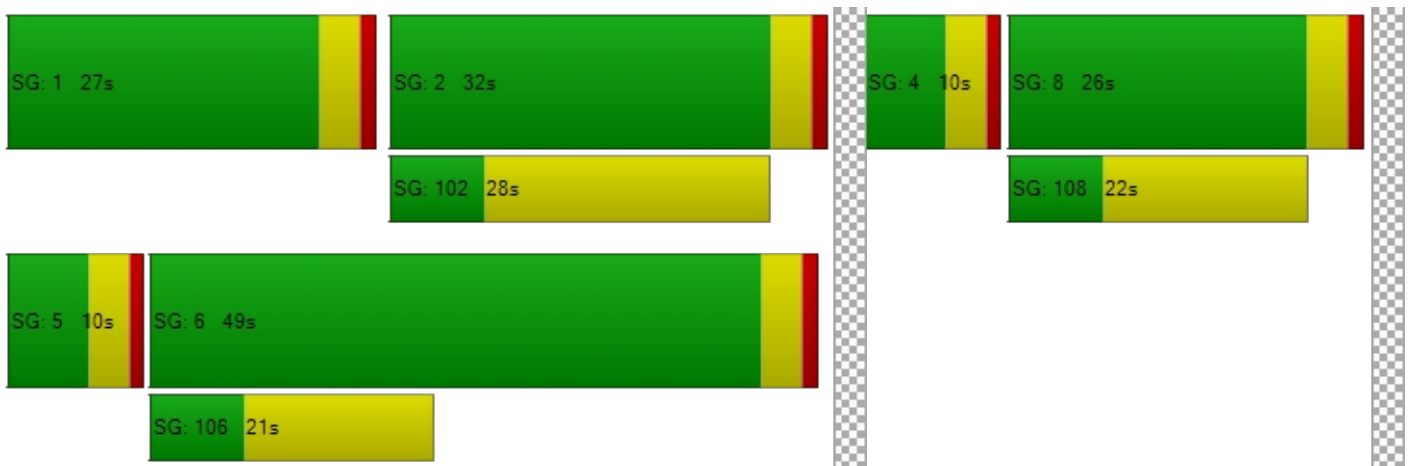
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 36.1  | 36.2 | 43.7 | 44.9  | 45.9 | 45.9 | 50.7  | 28.7 | 19.6 | 46.2  | 17.1 | 18.8 |
| Movement LOS                    | D     | D    | D    | D     | D    | D    | D     | C    | B    | D     | B    | B    |
| d_A, Approach Delay [s/veh]     | 39.76 |      |      | 45.51 |      |      | 27.75 |      |      | 20.13 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 25.92 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.830 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 37.18 | 37.18 | 0.00  | 37.18 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.428 | 2.008 | 0.000 | 3.284 |
| Crosswalk LOS  | B     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 463   | 126   | 589   | 947   |
| d_b, Bicycle Delay [s]                                     | 28.09 | 41.73 | 23.66 | 13.19 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.586 | 1.672 | 2.908 | 2.931 |
| Bicycle LOS  | B     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 37.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.876 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | T O R      |      |      | O L R      |      |      | T O R     |      |      | T O R     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name   | Kr Bo |      |      | Kr Bo |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 398   | 702  | 112  | 286   | 535  | 128  | 236   | 160  | 239  | 201   | 174  | 347  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 398   | 702  | 112  | 286   | 535  | 128  | 236   | 160  | 239  | 201   | 174  | 347  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 100   | 176  | 28   | 72    | 134  | 32   | 59    | 400  | 60   | 50    | 436  | 87   |
| Total Analysis Volume [veh/h]                                  | 398   | 702  | 112  | 286   | 535  | 128  | 236   | 160  | 239  | 201   | 174  | 347  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 17   | 34   | 0    | 13   | 30   | 0    | 12   | 42   | 0    | 11   | 41   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 19   | 0    | 0    | 19   | 0    | 0    | 26   | 0    | 0    | 28   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | L    | C    | C    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 13   | 25   | 25   | 9    | 21   | 21   | 8    | 43   | 43   | 7    | 42   | 42   |
| g / C, Green / Cycle                    | 0.13 | 0.25 | 0.25 | 0.09 | 0.21 | 0.21 | 0.08 | 0.43 | 0.43 | 0.07 | 0.42 | 0.42 |
| (v / s)_i Volume / Saturation Flow Rate | 0.11 | 0.22 | 0.21 | 0.08 | 0.14 | 0.07 | 0.07 | 0.32 | 0.32 | 0.06 | 0.37 | 0.36 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 350  | 380  | 190  | 350  | 380  | 190  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 458  | 467  | 467  | 320  | 783  | 391  | 285  | 164  | 821  | 251  | 160  | 802  |
| d1, Uniform Delay [s]                   | 42.7 | 36.5 | 36.0 | 45.0 | 36.7 | 33.8 | 45.3 | 23.9 | 23.8 | 45.8 | 26.5 | 26.3 |
| k, delay calibration                    | 0.11 | 0.25 | 0.23 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.15 | 12.8 | 9.03 | 8.69 | 1.06 | 0.48 | 6.07 | 3.18 | 6.06 | 5.90 | 6.85 | 11.9 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.87 | 0.89 | 0.85 | 0.89 | 0.68 | 0.33 | 0.83 | 0.75 | 0.74 | 0.80 | 0.87 | 0.86 |
| d, Delay for Lane Group [s/veh]       | 47.8 | 49.3 | 45.1 | 53.7 | 37.8 | 34.3 | 51.4 | 27.0 | 29.9 | 51.7 | 33.3 | 38.3 |
| Lane Group LOS                        | D    | D    | D    | D    | D    | C    | D    | C    | C    | D    | C    | D    |
| Critical Lane Group                   | No   | Yes  | No   | Yes  | No   | No   | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 5.11 | 11.3 | 10.2 | 3.88 | 6.10 | 2.69 | 3.11 | 12.4 | 12.9 | 2.65 | 16.0 | 17.0 |
| 50th-Percentile Queue Length [ft/ln]  | 127. | 282. | 256. | 96.8 | 152. | 67.2 | 77.7 | 310. | 324. | 66.3 | 402. | 425. |
| 95th-Percentile Queue Length [veh/ln] | 8.82 | 16.8 | 15.5 | 6.98 | 10.1 | 4.84 | 5.60 | 18.2 | 18.8 | 4.78 | 22.6 | 23.8 |
| 95th-Percentile Queue Length [ft/ln]  | 220. | 420. | 388. | 174. | 253. | 120. | 139. | 454. | 471. | 119. | 566. | 595. |

**Movement, Approach, & Intersection Results**

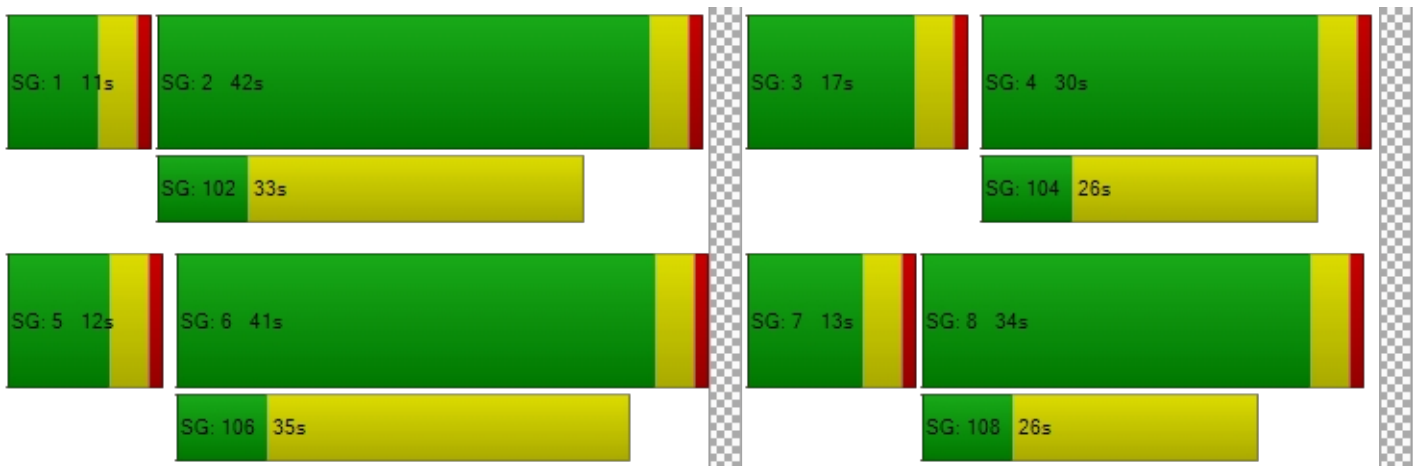
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 47.8  | 47.6 | 45.1 | 53.7  | 37.8 | 34.3 | 51.4  | 27.7 | 29.9 | 51.7  | 34.3 | 38.3 |
| Movement LOS                    | D     | D    | D    | D     | D    | C    | D     | C    | C    | D     | C    | D    |
| d_A, Approach Delay [s/veh]     | 47.49 |      |      | 42.18 |      |      | 30.68 |      |      | 36.48 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 37.51 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.876 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 39.67 | 39.67 | 39.67 | 39.67 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.813 | 2.910 | 3.260 | 3.253 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 599   | 519   | 759   | 739   |
| d_b, Bicycle Delay [s]                                     | 24.56 | 27.45 | 19.28 | 19.91 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.560 | 2.343 | 2.701 | 2.821 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.642 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |            |      |      |            |      |      |           |      |      |           |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram] |      |      | [Diagram] |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 1    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |



**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 125   | 331  | 138  | 240   | 260  | 168  | 297   | 197  | 163  | 180   | 146  | 160  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 125   | 331  | 138  | 240   | 260  | 168  | 297   | 197  | 163  | 180   | 146  | 160  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 31    | 83   | 35   | 60    | 65   | 42   | 74    | 493  | 41   | 45    | 367  | 40   |
| Total Analysis Volume [veh/h]                                  | 125   | 331  | 138  | 240   | 260  | 168  | 297   | 197  | 163  | 180   | 146  | 160  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 46   | 0    | 13   | 49   | 0    | 17   | 45   | 0    | 11   | 39   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 35   | 0    | 0    | 37   | 0    | 0    | 26   | 0    | 0    | 28   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | R    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6    | 13   | 13   | 9    | 16   | 16   | 12   | 70   | 70   | 7    | 65   | 65   |
| g / C, Green / Cycle                    | 0.05 | 0.11 | 0.11 | 0.08 | 0.14 | 0.14 | 0.10 | 0.61 | 0.61 | 0.06 | 0.57 | 0.57 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.09 | 0.07 | 0.07 | 0.07 | 0.09 | 0.08 | 0.35 | 0.09 | 0.05 | 0.26 | 0.08 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 380  | 190  | 350  | 570  | 190  | 350  | 570  | 190  |
| c, Capacity [veh/h]                     | 183  | 425  | 213  | 276  | 526  | 263  | 359  | 346  | 115  | 216  | 323  | 107  |
| d1, Uniform Delay [s]                   | 53.5 | 49.7 | 48.9 | 52.4 | 45.8 | 46.8 | 50.6 | 13.4 | 9.64 | 53.4 | 14.4 | 11.7 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.43 | 3.12 | 3.31 | 8.19 | 0.72 | 2.57 | 4.92 | 0.68 | 0.26 | 8.21 | 0.46 | 0.29 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.68 | 0.78 | 0.65 | 0.87 | 0.49 | 0.64 | 0.83 | 0.57 | 0.14 | 0.83 | 0.45 | 0.15 |
| d, Delay for Lane Group [s/veh]       | 58.0 | 52.8 | 52.2 | 60.6 | 46.5 | 49.4 | 55.5 | 14.1 | 9.90 | 61.6 | 14.9 | 12.0 |
| Lane Group LOS                        | E    | D    | D    | E    | D    | D    | E    | B    | A    | E    | B    | B    |
| Critical Lane Group                   | No   | Yes  | No   | Yes  | No   | No   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 1.89 | 4.81 | 3.99 | 3.74 | 3.49 | 4.73 | 4.43 | 9.85 | 1.79 | 2.82 | 7.32 | 1.99 |
| 50th-Percentile Queue Length [ft/ln]  | 47.2 | 120. | 99.7 | 93.4 | 87.3 | 118. | 110. | 246. | 44.8 | 70.4 | 182. | 49.8 |
| 95th-Percentile Queue Length [veh/ln] | 3.40 | 8.40 | 7.18 | 6.73 | 6.29 | 8.30 | 7.89 | 14.9 | 3.23 | 5.07 | 11.7 | 3.59 |
| 95th-Percentile Queue Length [ft/ln]  | 85.0 | 210. | 179. | 168. | 157. | 207. | 197. | 374. | 80.6 | 126. | 293. | 89.6 |

**Movement, Approach, & Intersection Results**

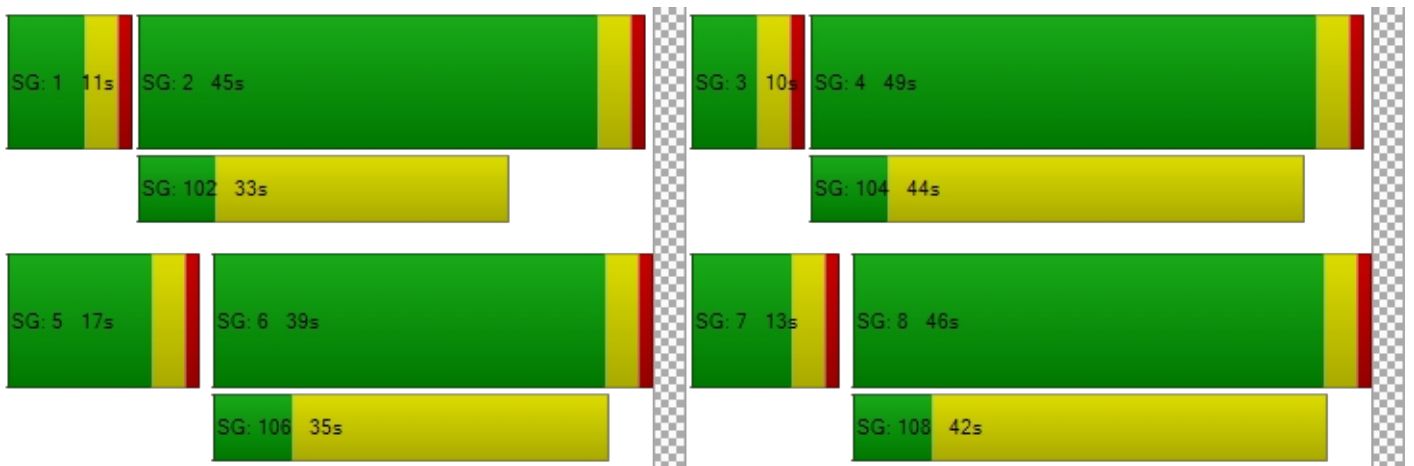
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 58.0  | 52.8 | 52.2 | 60.6  | 46.5 | 49.4 | 55.5  | 14.1 | 9.90 | 61.6  | 14.9 | 12.0 |
| Movement LOS                    | E     | D    | D    | E     | D    | D    | E     | B    | A    | E     | B    | B    |
| d_A, Approach Delay [s/veh]     | 53.79 |      |      | 52.33 |      |      | 18.93 |      |      | 19.33 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | B     |      |      | B     |      |      |
| d_I, Intersection Delay [s/veh] | 26.89 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.642 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.772 | 2.808 | 3.315 | 3.311 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 730   | 782   | 713   | 608   |
| d_b, Bicycle Delay [s]                                     | 23.19 | 21.32 | 23.83 | 27.84 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.050 | 2.111 | 2.896 | 2.553 |
| Bicycle LOS  | B     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 233.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.112 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | K O O R    |      |      | K O O R    |      |      | L O R     |      |      | K O O R   |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name   | Rose Drive |      |      | Rose Drive |      |      | Im Hi |      |      | Im Hi |      |      |
|--|------------|------|------|------------|------|------|-------|------|------|-------|------|------|
| Base Volume Input [veh/h]                                      | 271        | 630  | 129  | 100        | 526  | 32   | 87    | 191  | 300  | 168   | 149  | 879  |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 271        | 630  | 129  | 100        | 526  | 32   | 87    | 191  | 300  | 168   | 149  | 879  |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 68         | 158  | 32   | 251        | 132  | 8    | 22    | 479  | 75   | 42    | 374  | 220  |
| Total Analysis Volume [veh/h]                                  | 271        | 630  | 129  | 100        | 526  | 32   | 87    | 191  | 300  | 168   | 149  | 879  |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 16   | 53   | 0    | 12   | 49   | 0    | 10   | 45   | 0    | 10   | 45   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 42   | 0    | 0    | 36   | 0    | 0    | 34   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | C    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 11   | 23   | 23   | 8    | 20   | 20   | 6    | 67   | 67   | 6    | 67   | 67   |
| g / C, Green / Cycle                    | 0.09 | 0.19 | 0.19 | 0.07 | 0.17 | 0.17 | 0.05 | 0.56 | 0.56 | 0.05 | 0.56 | 0.56 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.17 | 0.07 | 0.29 | 0.14 | 0.02 | 0.05 | 0.39 | 0.39 | 0.05 | 0.26 | 0.46 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 380  | 190  | 180  | 380  | 190  | 350  | 570  | 190  |
| c, Capacity [veh/h]                     | 329  | 734  | 367  | 236  | 633  | 316  | 91   | 211  | 105  | 178  | 316  | 105  |
| d1, Uniform Delay [s]                   | 53.4 | 46.8 | 41.9 | 55.9 | 48.4 | 42.4 | 56.8 | 19.3 | 19.4 | 56.8 | 16.0 | 22.0 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.14 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.22 | 3.07 | 0.57 | 147  | 2.91 | 0.14 | 33.3 | 1.95 | 3.89 | 20.6 | 0.51 | 7.71 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.82 | 0.86 | 0.35 | 4.26 | 0.83 | 0.10 | 0.95 | 0.70 | 0.70 | 0.95 | 0.47 | 0.83 |
| d, Delay for Lane Group [s/veh]       | 58.6 | 49.9 | 42.5 | 152  | 51.3 | 42.5 | 90.1 | 21.3 | 23.3 | 77.4 | 16.5 | 29.7 |
| Lane Group LOS                        | E    | D    | D    | F    | D    | D    | F    | C    | C    | E    | B    | C    |
| Critical Lane Group                   | No   | Yes  | No   | Yes  | No   | No   | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 4.25 | 9.38 | 3.38 | 51.7 | 7.86 | 0.82 | 3.48 | 14.9 | 15.5 | 3.05 | 8.20 | 21.7 |
| 50th-Percentile Queue Length [ft/ln]  | 106. | 234. | 84.5 | 129  | 196. | 20.5 | 86.9 | 373. | 389. | 76.2 | 205. | 543. |
| 95th-Percentile Queue Length [veh/ln] | 7.64 | 14.4 | 6.09 | 77.8 | 12.4 | 1.48 | 6.26 | 21.2 | 22.0 | 5.49 | 12.9 | 29.3 |
| 95th-Percentile Queue Length [ft/ln]  | 190. | 360. | 152. | 194  | 311. | 37.0 | 156. | 532. | 551. | 137. | 322. | 734. |



**Movement, Approach, & Intersection Results**

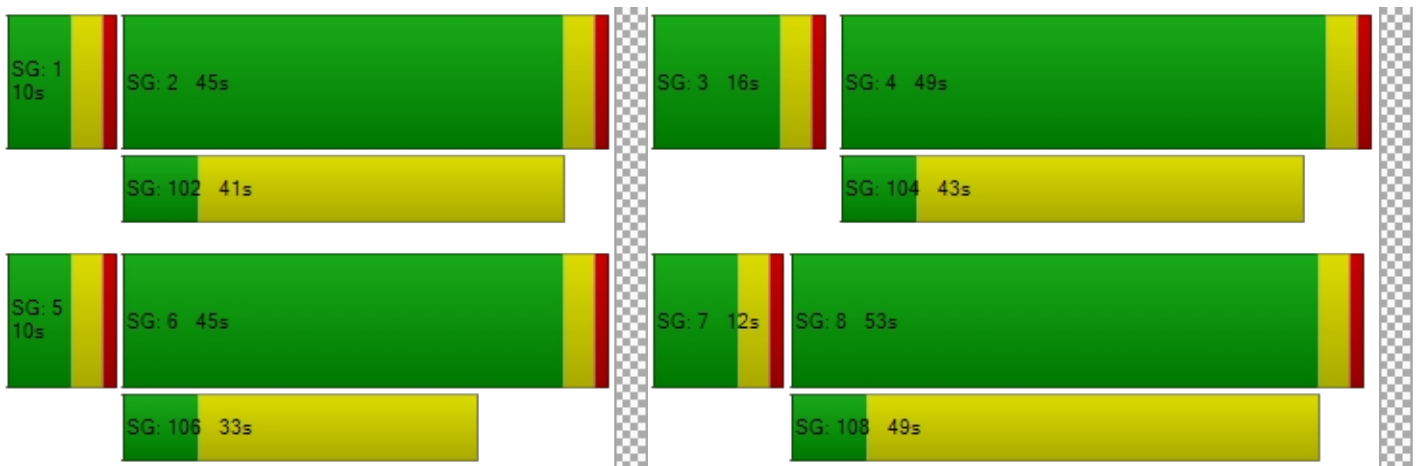
|                                 |        |      |      |         |      |      |       |      |      |       |      |      |
|---------------------------------|--------|------|------|---------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 58.6   | 49.9 | 42.5 | 152     | 51.3 | 42.5 | 90.1  | 21.8 | 23.3 | 77.4  | 16.5 | 29.7 |
| Movement LOS                    | E      | D    | D    | F       | D    | D    | F     | C    | C    | E     | B    | C    |
| d_A, Approach Delay [s/veh]     | 51.28  |      |      | 1000.22 |      |      | 24.58 |      |      | 25.17 |      |      |
| Approach LOS                    | D      |      |      | F       |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 233.47 |      |      |         |      |      |       |      |      |       |      |      |
| Intersection LOS                | F      |      |      |         |      |      |       |      |      |       |      |      |
| Intersection V/C                | 1.112  |      |      |         |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.890 | 3.048 | 3.179 | 3.469 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 816   | 750   | 683   | 683   |
| d_b, Bicycle Delay [s]                                     | 21.02 | 23.45 | 26.02 | 26.02 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.409 | 2.849 | 2.826 | 2.958 |
| Bicycle LOS  | B     | C     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



*APPENDIX D-IV*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
WITH MITIGATION TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 112.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.899 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound          |        |        |
| Lane Configuration           |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 0      | 1            | 0      | 1      | 1                  | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00               |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No                 |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | No           |        |        | Yes                |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 355             | 198    | 180    | 8               | 402    | 46     | 53           | 248    | 591    | 1022               | 870    | 2      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 355             | 198    | 180    | 8               | 402    | 46     | 53           | 248    | 591    | 1022               | 870    | 2      |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 0.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 89              | 50     | 0      | 2               | 101    | 12     | 13           | 62     | 148    | 256                | 218    | 1      |
| Total Analysis Volume [veh/h]               | 355             | 198    | 0      | 8               | 402    | 46     | 53           | 248    | 591    | 1022               | 870    | 2      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         | 2,8     |          |         |         |
| Lead / Lag                   | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6     | 6     | 0     | 6     | 6     | 0     | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 6     | 30    | 0     | 30    | 30    | 0     | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 1.0   | 0.0   | 1.0   | 1.0   | 0.0   | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10    | 42    | 0     | 10    | 14    | 0     | 11       | 36      | 36      | 28       | 53      | 0       |
| Vehicle Extension [s]        | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 31    | 0     | 0     | 0     | 0     | 0        | 25      | 25      | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R    | L     | C      | C      | L     | C     | R    | L      | C     | C     |
|---|-------|-------|-------|------|-------|--------|--------|-------|-------|------|--------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120  | 120   | 120    | 120    | 120   | 120   | 120  | 120    | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00   | 4.00   | 4.00  | 4.00  | 4.00 | 4.00   | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00   | 0.00   | 0.00  | 0.00  | 0.00 | 0.00   | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00   | 2.00   | 2.00  | 2.00  | 0.00 | 2.00   | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 18    | 18    | 18    | 18   | 10    | 10     | 10     | 5     | 52    | 88   | 24     | 71    | 71    |
| g / C, Green / Cycle                    | 0.15  | 0.15  | 0.15  | 0.15 | 0.08  | 0.08   | 0.08   | 0.04  | 0.44  | 0.73 | 0.20   | 0.59  | 0.59  |
| (v / s)_i Volume / Saturation Flow Rate | 0.11  | 0.11  | 0.09  | 0.00 | 0.00  | 0.12   | 0.12   | 0.03  | 0.04  | 0.31 | 0.29   | 0.15  | 0.16  |
| s, saturation flow rate [veh/h]         | 1750  | 1750  | 1900  | 1900 | 1800  | 1900   | 1900   | 1800  | 5700  | 1900 | 3500   | 3800  | 1900  |
| c, Capacity [veh/h]                     | 257   | 257   | 279   | 279  | 151   | 159    | 159    | 76    | 2483  | 1393 | 700    | 2255  | 1128  |
| d1, Uniform Delay [s]                   | 48.91 | 48.94 | 48.17 | 0.00 | 50.60 | 54.99  | 54.99  | 56.73 | 19.99 | 6.20 | 48.02  | 11.68 | 11.78 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11 | 0.11  | 0.11   | 0.11   | 0.11  | 0.50  | 0.50 | 0.15   | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  | 1.00 | 1.00   | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 3.92  | 3.98  | 2.39  | 0.00 | 0.14  | 198.12 | 182.16 | 10.84 | 0.08  | 0.95 | 209.05 | 0.27  | 0.58  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00   | 0.00   | 0.00  | 0.00  | 0.00 | 0.00   | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  | 1.00 | 1.00   | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  | 1.00 | 1.00   | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |      |       |        |        |       |       |        |         |        |        |
|---------------------------------------|-------|-------|-------|------|-------|--------|--------|-------|-------|--------|---------|--------|--------|
| X, volume / capacity                  | 0.73  | 0.73  | 0.64  | 0.00 | 0.05  | 1.42   | 1.39   | 0.70  | 0.10  | 0.42   | 1.46    | 0.25   | 0.27   |
| d, Delay for Lane Group [s/veh]       | 52.83 | 52.92 | 50.56 | 0.00 | 50.74 | 253.12 | 237.15 | 67.57 | 20.07 | 7.15   | 257.07  | 11.95  | 12.36  |
| Lane Group LOS                        | D     | D     | D     | A    | D     | F      | F      | E     | C     | A      | F       | B      | B      |
| Critical Lane Group                   | No    | Yes   | No    | No   | No    | Yes    | No     | No    | No    | Yes    | Yes     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 5.64  | 5.67  | 5.19  | 0.00 | 0.23  | 13.59  | 12.89  | 1.82  | 1.39  | 5.52   | 30.75   | 3.67   | 3.97   |
| 50th-Percentile Queue Length [ft/ln]  | 141.1 | 141.8 | 129.7 | 0.00 | 5.71  | 339.86 | 322.18 | 45.41 | 34.85 | 138.02 | 768.67  | 91.70  | 99.34  |
| 95th-Percentile Queue Length [veh/ln] | 9.54  | 9.58  | 8.92  | 0.00 | 0.41  | 21.95  | 20.84  | 3.27  | 2.51  | 9.37   | 47.18   | 6.60   | 7.15   |
| 95th-Percentile Queue Length [ft/ln]  | 238.5 | 239.5 | 223.0 | 0.00 | 10.28 | 548.82 | 521.02 | 81.73 | 62.74 | 234.36 | 1179.52 | 165.05 | 178.82 |

**Movement, Approach, & Intersection Results**

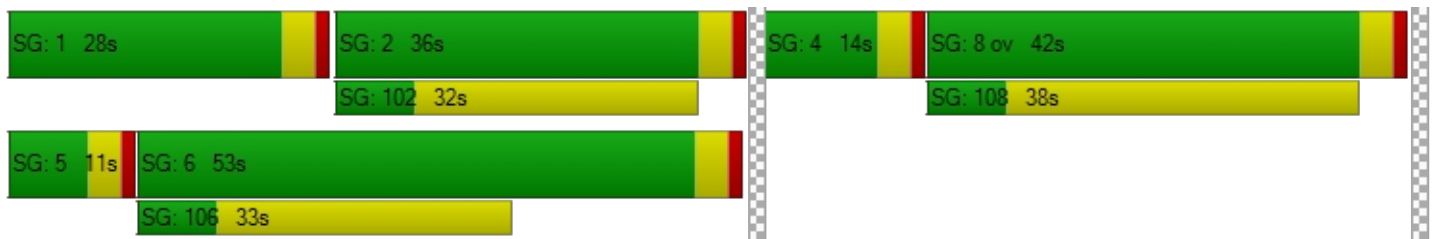
|                                 |        |       |      |        |        |        |       |       |      |        |       |       |
|---------------------------------|--------|-------|------|--------|--------|--------|-------|-------|------|--------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.88  | 50.81 | 0.00 | 50.74  | 246.16 | 237.15 | 67.57 | 20.07 | 7.15 | 257.07 | 12.09 | 12.36 |
| Movement LOS                    | D      | D     | A    | D      | F      | F      | E     | C     | A    | F      | B     | B     |
| d_A, Approach Delay [s/veh]     | 52.13  |       |      | 241.82 |        |        | 14.33 |       |      | 144.28 |       |       |
| Approach LOS                    | D      |       |      | F      |        |        | B     |       |      | F      |       |       |
| d_I, Intersection Delay [s/veh] | 112.03 |       |      |        |        |        |       |       |      |        |       |       |
| Intersection LOS                | F      |       |      |        |        |        |       |       |      |        |       |       |
| Intersection V/C                | 0.899  |       |      |        |        |        |       |       |      |        |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 0.00  | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.965 | 2.452 | 0.000 | 3.001 |
| Crosswalk LOS  | C     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 633   | 167   | 533   | 816   |
| d_b, Bicycle Delay [s]                                   | 28.03 | 50.43 | 32.28 | 21.02 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.016 | 1.936 | 2.050 | 2.601 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 45.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.713 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |



**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 149             | 259    | 26     | 879             | 946    | 300    | 79           | 520    | 149    | 44         | 430    | 391    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 149             | 259    | 26     | 879             | 946    | 300    | 79           | 520    | 149    | 44         | 430    | 391    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 37              | 65     | 7      | 220             | 237    | 75     | 20           | 130    | 37     | 11         | 108    | 98     |
| Total Analysis Volume [veh/h]               | 149             | 259    | 26     | 879             | 946    | 300    | 79           | 520    | 149    | 44         | 430    | 391    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 29       | 38      | 0       | 33       | 42      | 0       | 10       | 39      | 0       | 10       | 39      | 39      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 28      | 28      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | C     | L     | C     | R    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 |
| g_i, Effective Green Time [s]           | 12    | 26    | 26    | 29    | 43    | 43    | 6     | 45    | 45    | 5     | 44    | 77   |
| g / C, Green / Cycle                    | 0.10  | 0.21  | 0.21  | 0.24  | 0.36  | 0.36  | 0.05  | 0.37  | 0.37  | 0.04  | 0.36  | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.08  | 0.07  | 0.25  | 0.33  | 0.33  | 0.02  | 0.18  | 0.17  | 0.02  | 0.11  | 0.21 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900 |
| c, Capacity [veh/h]                     | 180   | 406   | 406   | 846   | 676   | 676   | 165   | 707   | 707   | 71    | 1384  | 1214 |
| d1, Uniform Delay [s]                   | 53.04 | 40.16 | 40.08 | 45.53 | 37.09 | 37.09 | 55.76 | 28.96 | 28.50 | 56.79 | 27.36 | 9.85 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.30  | 0.30  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               | 9.41  | 0.53  | 0.51  | 26.08 | 13.59 | 13.59 | 2.14  | 2.43  | 2.11  | 8.59  | 0.59  | 0.70 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.83   | 0.35   | 0.35   | 1.04   | 0.92   | 0.92   | 0.48  | 0.49   | 0.46   | 0.62  | 0.31   | 0.32   |
| d, Delay for Lane Group [s/veh]       | 62.45  | 40.68  | 40.59  | 71.61  | 50.68  | 50.68  | 57.89 | 31.39  | 30.61  | 65.38 | 27.95  | 10.55  |
| Lane Group LOS                        | E      | D      | D      | F      | D      | D      | E     | C      | C      | E     | C      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No    | Yes    | No     | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.88   | 3.70   | 3.61   | 15.55  | 19.79  | 19.79  | 1.22  | 8.13   | 7.41   | 1.48  | 4.55   | 4.73   |
| 50th-Percentile Queue Length [ft/ln]  | 121.95 | 92.44  | 90.22  | 388.73 | 494.71 | 494.71 | 30.42 | 203.31 | 185.22 | 37.10 | 113.72 | 118.33 |
| 95th-Percentile Queue Length [veh/ln] | 8.50   | 6.66   | 6.50   | 22.52  | 27.08  | 27.08  | 2.19  | 12.81  | 11.87  | 2.67  | 8.05   | 8.30   |
| 95th-Percentile Queue Length [ft/ln]  | 212.50 | 166.39 | 162.40 | 562.92 | 677.09 | 677.09 | 54.76 | 320.23 | 296.82 | 66.78 | 201.17 | 207.52 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 62.45 | 40.64 | 40.59 | 71.61 | 50.68 | 50.68 | 57.89 | 31.13 | 30.61 | 65.38 | 27.95 | 10.55 |
| Movement LOS                    | E     | D     | D     | F     | D     | D     | E     | C     | C     | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 48.13 |       |       | 59.34 |       |       | 33.85 |       |       | 21.99 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 45.86 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.713 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.620 | 2.930 | 2.731 | 2.839 |
| Crosswalk LOS  | B     | C     | B     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 567   | 633   | 583   | 583   |
| d_b, Bicycle Delay [s]                                   | 30.83 | 28.03 | 30.12 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.918 | 3.313 | 2.177 | 2.273 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 31.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.740 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | No               |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |            |        |        |            |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 267        | 240    | 152    | 944        | 590    | 37     | 44               | 1345   | 249    | 280              | 1569   | 598    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 267        | 240    | 152    | 944        | 590    | 37     | 44               | 1345   | 249    | 280              | 1569   | 598    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 67         | 60     | 38     | 236        | 148    | 9      | 11               | 336    | 62     | 70               | 392    | 150    |
| Total Analysis Volume [veh/h]               | 267        | 240    | 152    | 944        | 590    | 37     | 44               | 1345   | 249    | 280              | 1569   | 598    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         | 4,6     |
| Lead / Lag                   | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6     | 6     | 0     | 6     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30    | 30    | 0     | 6     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0   | 1.0   | 0.0   | 1.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 10    | 49    | 0     | 10    | 49    | 0     | 10       | 45      | 0       | 11       | 46      | 46      |
| Vehicle Extension [s]        | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 0     | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 36    | 0     | 0        | 34      | 0       | 0        | 26      | 26      |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | C     | R     | L     | C     | C     | L     | C     | R    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 |
| g_i, Effective Green Time [s]           | 33    | 33    | 33    | 33    | 33    | 33    | 33    | 4     | 53    | 53    | 7     | 56    | 93   |
| g / C, Green / Cycle                    | 0.31  | 0.31  | 0.31  | 0.31  | 0.31  | 0.31  | 0.31  | 0.04  | 0.51  | 0.51  | 0.07  | 0.53  | 0.88 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.06  | 0.08  | 0.19  | 0.22  | 0.26  | 0.02  | 0.02  | 0.28  | 0.27  | 0.08  | 0.28  | 0.31 |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1750  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500  | 5700  | 1900 |
| c, Capacity [veh/h]                     | 224   | 1183  | 592   | 932   | 606   | 592   | 592   | 75    | 1928  | 964   | 234   | 3037  | 1676 |
| d1, Uniform Delay [s]                   | 26.59 | 26.57 | 27.06 | 30.58 | 31.79 | 33.86 | 25.39 | 49.44 | 17.75 | 17.54 | 48.99 | 15.81 | 1.06 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.18  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.27 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               | 96.77 | 0.08  | 0.23  | 0.96  | 1.07  | 5.75  | 0.04  | 7.16  | 1.17  | 2.17  | 97.44 | 0.63  | 0.32 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |        |       |        |       |       |       |       |       |        |        |        |        |       |
|---------------------------------------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|
| X, volume / capacity                  | 1.19   | 0.20  | 0.26   | 0.70  | 0.63  | 0.85  | 0.06  | 0.59  | 0.56   | 0.54   | 1.20   | 0.52   | 0.36  |
| d, Delay for Lane Group [s/veh]       | 123.37 | 26.66 | 27.29  | 31.54 | 32.86 | 39.61 | 25.43 | 56.59 | 18.92  | 19.71  | 146.42 | 16.45  | 1.38  |
| Lane Group LOS                        | F      | C     | C      | C     | C     | D     | C     | E     | B      | B      | F      | B      | A     |
| Critical Lane Group                   | No     | No    | No     | No    | No    | Yes   | No    | No    | Yes    | No     | Yes    | No     | No    |
| 50th-Percentile Queue Length [veh/ln] | 5.06   | 2.22  | 2.88   | 7.01  | 8.53  | 12.73 | 0.66  | 1.28  | 8.89   | 8.80   | 6.22   | 7.92   | 0.62  |
| 50th-Percentile Queue Length [ft/ln]  | 126.57 | 55.45 | 72.02  | 175.1 | 213.1 | 318.1 | 16.42 | 31.99 | 222.29 | 220.07 | 155.51 | 198.01 | 15.62 |
| 95th-Percentile Queue Length [veh/ln] | 9.11   | 3.99  | 5.19   | 11.35 | 13.32 | 18.58 | 1.18  | 2.30  | 13.78  | 13.67  | 10.87  | 12.54  | 1.12  |
| 95th-Percentile Queue Length [ft/ln]  | 227.83 | 99.82 | 129.63 | 283.6 | 332.8 | 464.4 | 29.55 | 57.58 | 344.54 | 341.72 | 271.72 | 313.40 | 28.11 |



**Movement, Approach, & Intersection Results**

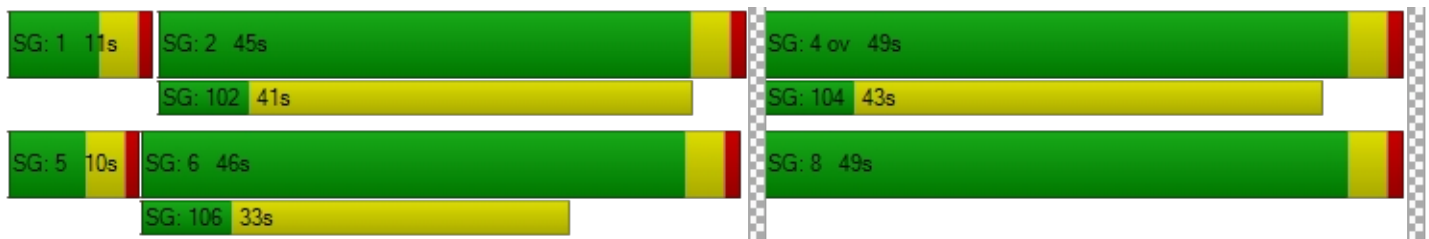
|                                 |        |       |       |       |       |       |       |       |       |        |       |      |
|---------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|------|
| d_M, Delay for Movement [s/veh] | 123.37 | 26.66 | 27.29 | 32.03 | 38.62 | 25.43 | 56.59 | 19.08 | 19.71 | 146.42 | 16.45 | 1.38 |
| Movement LOS                    | F      | C     | C     | C     | D     | C     | E     | B     | B     | F      | B     | A    |
| d_A, Approach Delay [s/veh]     | 65.98  |       |       | 34.30 |       |       | 20.18 |       |       | 27.64  |       |      |
| Approach LOS                    | E      |       |       | C     |       |       | C     |       |       | C      |       |      |
| d_I, Intersection Delay [s/veh] | 31.36  |       |       |       |       |       |       |       |       |        |       |      |
| Intersection LOS                | C      |       |       |       |       |       |       |       |       |        |       |      |
| Intersection V/C                | 0.740  |       |       |       |       |       |       |       |       |        |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.08 | 42.08 | 42.08 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.849 | 2.943 | 3.470 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 857   | 857   | 781   | 800   |
| d_b, Bicycle Delay [s]                                   | 17.14 | 17.14 | 19.50 | 18.90 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.103 | 2.856 | 2.461 | 2.905 |
| Bicycle LOS  | B     | C     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |







**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 22.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.540 |

**Intersection Setup**

| Name                         | Valencia Avenue   |        |        | Valencia Avenue   |        |        | Lambert Road  |        |        | Carbon Canyon Road  |        |        |
|------------------------------|---|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |  |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1      | 1   | 0      | 0      | 1   | 0      | 1      | 1   | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 | No  |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes   |        |        | Yes   |        |        | No  |        |        | Yes   |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 404             | 154    | 840    | 26              | 118    | 36     | 31           | 915    | 573    | 189                | 357    | 9      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 404             | 154    | 840    | 26              | 118    | 36     | 31           | 915    | 573    | 189                | 357    | 9      |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 0.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 101             | 39     | 0      | 7               | 30     | 9      | 8            | 229    | 143    | 47                 | 89     | 2      |
| Total Analysis Volume [veh/h]               | 404             | 154    | 0      | 26              | 118    | 36     | 31           | 915    | 573    | 189                | 357    | 9      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         | 2,8     |          |         |         |
| Lead / Lag                   | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6     | 6     | 0     | 6     | 6     | 0     | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 6     | 30    | 0     | 30    | 30    | 0     | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 1.0   | 0.0   | 1.0   | 1.0   | 0.0   | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10    | 42    | 0     | 10    | 10    | 0     | 10       | 36      | 36      | 17       | 43      | 0       |
| Vehicle Extension [s]        | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 31    | 0     | 0     | 0     | 0     | 0        | 25      | 25      | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R    | L     | C     | C     | L     | C     | R    | L     | C    | C    |
|---|-------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|------|------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105  | 105   | 105   | 105   | 105   | 105   | 105  | 105   | 105  | 105  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 17    | 17    | 17    | 17   | 6     | 6     | 6     | 4     | 58    | 89   | 8     | 63   | 63   |
| g / C, Green / Cycle                    | 0.16  | 0.16  | 0.16  | 0.16 | 0.06  | 0.06  | 0.06  | 0.03  | 0.56  | 0.85 | 0.07  | 0.60 | 0.60 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12  | 0.12  | 0.08  | 0.00 | 0.01  | 0.04  | 0.04  | 0.02  | 0.16  | 0.30 | 0.05  | 0.06 | 0.07 |
| s, saturation flow rate [veh/h]         | 1750  | 1750  | 1900  | 1900 | 1800  | 1900  | 1900  | 1800  | 5700  | 1900 | 3500  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 280   | 280   | 304   | 304  | 104   | 110   | 110   | 63    | 3164  | 1614 | 261   | 2260 | 1130 |
| d1, Uniform Delay [s]                   | 41.92 | 41.92 | 40.35 | 0.00 | 47.33 | 48.64 | 48.59 | 49.79 | 12.39 | 1.71 | 47.58 | 9.22 | 9.25 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11 | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.49  | 3.49  | 1.30  | 0.00 | 1.23  | 8.09  | 7.44  | 5.78  | 0.23  | 0.61 | 3.79  | 0.09 | 0.20 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |      |       |        |       |       |        |       |        |       |       |
|---------------------------------------|-------|-------|-------|------|-------|--------|-------|-------|--------|-------|--------|-------|-------|
| X, volume / capacity                  | 0.72  | 0.72  | 0.51  | 0.00 | 0.25  | 0.71   | 0.69  | 0.49  | 0.29   | 0.36  | 0.72   | 0.11  | 0.11  |
| d, Delay for Lane Group [s/veh]       | 45.41 | 45.41 | 41.66 | 0.00 | 48.56 | 56.74  | 56.03 | 55.57 | 12.62  | 2.32  | 51.37  | 9.31  | 9.44  |
| Lane Group LOS                        | D     | D     | D     | A    | D     | E      | E     | E     | B      | A     | D      | A     | A     |
| Critical Lane Group                   | Yes   | No    | No    | No   | No    | Yes    | No    | No    | No     | Yes   | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 5.21  | 5.21  | 3.74  | 0.00 | 0.69  | 2.25   | 2.17  | 0.90  | 3.73   | 1.51  | 2.55   | 1.17  | 1.26  |
| 50th-Percentile Queue Length [ft/ln]  | 130.3 | 130.3 | 93.40 | 0.00 | 17.13 | 56.30  | 54.37 | 22.48 | 93.15  | 37.70 | 63.70  | 29.36 | 31.47 |
| 95th-Percentile Queue Length [veh/ln] | 8.96  | 8.96  | 6.72  | 0.00 | 1.23  | 4.05   | 3.91  | 1.62  | 6.71   | 2.71  | 4.59   | 2.11  | 2.27  |
| 95th-Percentile Queue Length [ft/ln]  | 223.9 | 223.9 | 168.1 | 0.00 | 30.83 | 101.34 | 97.87 | 40.46 | 167.66 | 67.86 | 114.67 | 52.85 | 56.65 |

**Movement, Approach, & Intersection Results**

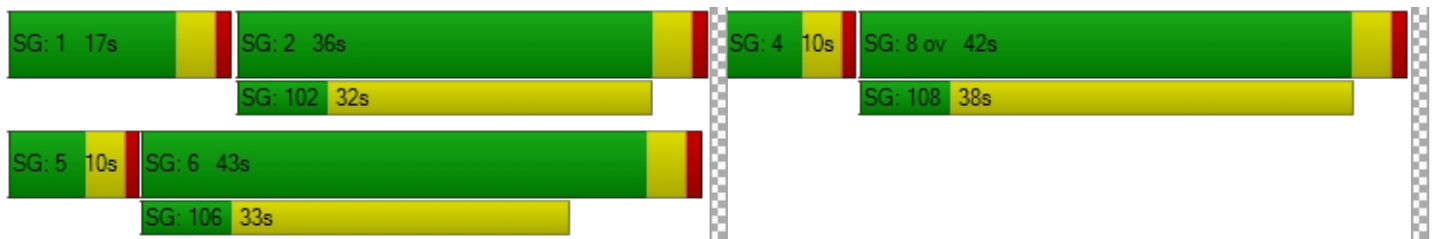
|                                 |       |       |      |       |       |       |       |       |      |       |      |      |
|---------------------------------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 45.41 | 41.66 | 0.00 | 48.56 | 56.50 | 56.03 | 55.57 | 12.62 | 2.32 | 51.37 | 9.36 | 9.44 |
| Movement LOS                    | D     | D     | A    | D     | E     | E     | E     | B     | A    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 44.38 |       |      | 55.26 |       |       | 9.61  |       |      | 23.66 |      |      |
| Approach LOS                    | D     |       |      | E     |       |       | A     |       |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 22.21 |       |      |       |       |       |       |       |      |       |      |      |
| Intersection LOS                | C     |       |      |       |       |       |       |       |      |       |      |      |
| Intersection V/C                | 0.540 |       |      |       |       |       |       |       |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.11 | 42.11 | 0.00  | 42.11 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.801 | 2.380 | 0.000 | 2.915 |
| Crosswalk LOS  | C     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 723   | 114   | 609   | 742   |
| d_b, Bicycle Delay [s]                                   | 21.40 | 46.70 | 25.40 | 20.77 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.020 | 1.708 | 2.395 | 1.865 |
| Bicycle LOS  | B     | A     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 37.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.911 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | TLO             |        |        | TLO             |        |        | TLO          |        |        | TLO        |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 231             | 679    | 51     | 538             | 295    | 62     | 219          | 718    | 158    | 33         | 550    | 877    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 231             | 679    | 51     | 538             | 295    | 62     | 219          | 718    | 158    | 33         | 550    | 877    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 58              | 170    | 13     | 135             | 74     | 16     | 55           | 180    | 40     | 8          | 138    | 219    |
| Total Analysis Volume [veh/h]               | 231             | 679    | 51     | 538             | 295    | 62     | 219          | 718    | 158    | 33         | 550    | 877    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 27       | 39      | 0       | 24       | 36      | 0       | 13       | 36      | 0       | 16       | 39      | 39      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 28      | 28      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  |
| g_i, Effective Green Time [s]           | 17    | 25    | 25    | 20    | 28    | 28    | 9     | 50    | 50    | 4     | 45    | 69    |
| g / C, Green / Cycle                    | 0.15  | 0.22  | 0.22  | 0.17  | 0.25  | 0.25  | 0.08  | 0.43  | 0.43  | 0.03  | 0.39  | 0.60  |
| (v / s)_i Volume / Saturation Flow Rate | 0.13  | 0.19  | 0.19  | 0.15  | 0.10  | 0.09  | 0.06  | 0.24  | 0.22  | 0.02  | 0.14  | 0.46  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 263   | 417   | 417   | 609   | 470   | 470   | 276   | 822   | 822   | 63    | 1477  | 1135  |
| d1, Uniform Delay [s]                   | 48.13 | 43.55 | 43.29 | 46.38 | 36.10 | 35.87 | 52.08 | 24.30 | 23.85 | 54.59 | 25.14 | 17.31 |
| k, delay calibration                    | 0.11  | 0.19  | 0.18  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.16  | 10.72 | 8.73  | 4.43  | 0.53  | 0.48  | 5.11  | 2.64  | 2.31  | 6.62  | 0.72  | 5.12  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.88   | 0.89   | 0.87   | 0.88   | 0.39   | 0.37   | 0.79   | 0.55   | 0.52   | 0.52  | 0.37   | 0.77   |
| d, Delay for Lane Group [s/veh]       | 57.29  | 54.27  | 52.02  | 50.81  | 36.63  | 36.35  | 57.19  | 26.93  | 26.16  | 61.21 | 25.86  | 22.43  |
| Lane Group LOS                        | E      | D      | D      | D      | D      | D      | E      | C      | C      | E     | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | No     | No     | Yes    | No     | No     | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 7.14   | 11.36  | 10.83  | 7.85   | 4.38   | 4.09   | 3.30   | 9.62   | 8.84   | 1.06  | 5.50   | 17.84  |
| 50th-Percentile Queue Length [ft/ln]  | 178.45 | 284.12 | 270.76 | 196.21 | 109.52 | 102.35 | 82.46  | 240.58 | 221.08 | 26.40 | 137.40 | 446.00 |
| 95th-Percentile Queue Length [veh/ln] | 11.52  | 16.89  | 16.23  | 12.44  | 7.81   | 7.37   | 5.94   | 14.71  | 13.72  | 1.90  | 9.34   | 24.77  |
| 95th-Percentile Queue Length [ft/ln]  | 287.99 | 422.34 | 405.69 | 311.07 | 195.34 | 184.23 | 148.43 | 367.77 | 343.01 | 47.51 | 233.52 | 619.17 |

**Movement, Approach, & Intersection Results**

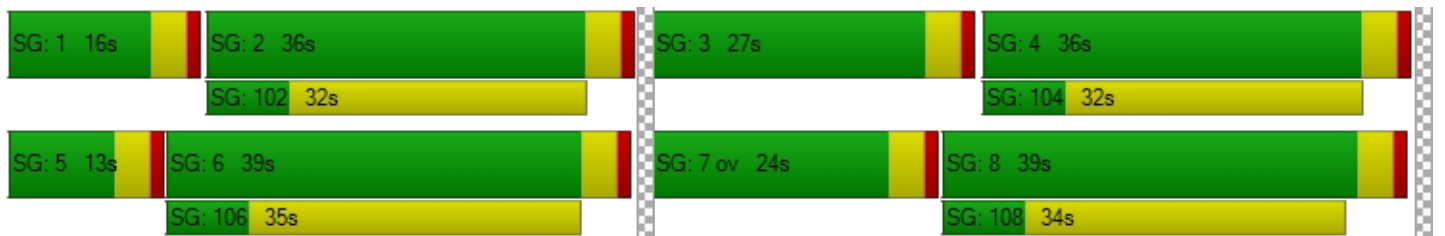
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 57.29 | 53.24 | 52.02 | 50.81 | 36.52 | 36.35 | 57.19 | 26.65 | 26.16 | 61.21 | 25.86 | 22.43 |
| Movement LOS                    | E     | D     | D     | D     | D     | D     | E     | C     | C     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 54.15 |       |       | 45.10 |       |       | 32.68 |       |       | 24.60 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 37.20 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.911 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.594 | 2.898 | 2.780 | 2.914 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 608   | 556   | 556   | 608   |
| d_b, Bicycle Delay [s]                                   | 27.84 | 29.97 | 29.97 | 27.84 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.352 | 2.298 | 2.463 | 2.764 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.843 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | No               |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]                   | 271        | 630    | 129    | 1005       | 526    | 32     | 87               | 1916   | 300    | 168              | 1496   | 879    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 271        | 630    | 129    | 1005       | 526    | 32     | 87               | 1916   | 300    | 168              | 1496   | 879    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 68         | 158    | 32     | 251        | 132    | 8      | 22               | 479    | 75     | 42               | 374    | 220    |
| Total Analysis Volume [veh/h]               | 271        | 630    | 129    | 1005       | 526    | 32     | 87               | 1916   | 300    | 168              | 1496   | 879    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         | 4,6     |
| Lead / Lag                   | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6     | 6     | 0     | 6     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30    | 30    | 0     | 6     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0   | 1.0   | 0.0   | 1.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 10    | 50    | 0     | 10    | 50    | 0     | 10       | 45      | 0       | 10       | 45      | 45      |
| Vehicle Extension [s]        | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 0     | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 36    | 0     | 0        | 34      | 0       | 0        | 26      | 26      |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | C     | R     | L     | C     | C     | L     | C     | R    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 |
| g_i, Effective Green Time [s]           | 35    | 35    | 35    | 35    | 35    | 35    | 35    | 6     | 52    | 52    | 6     | 52    | 91   |
| g / C, Green / Cycle                    | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 0.33  | 0.06  | 0.50  | 0.50  | 0.06  | 0.50  | 0.87 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.17  | 0.07  | 0.19  | 0.19  | 0.28  | 0.02  | 0.05  | 0.39  | 0.39  | 0.05  | 0.26  | 0.46 |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1750  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500  | 5700  | 1900 |
| c, Capacity [veh/h]                     | 268   | 1260  | 630   | 696   | 649   | 630   | 630   | 106   | 1882  | 941   | 206   | 2823  | 1643 |
| d1, Uniform Delay [s]                   | 25.40 | 28.12 | 25.17 | 29.01 | 29.01 | 32.44 | 23.86 | 48.85 | 21.86 | 21.90 | 48.83 | 18.13 | 1.78 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.19  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               | 28.62 | 0.31  | 0.16  | 9.21  | 0.64  | 5.16  | 0.03  | 14.24 | 3.36  | 6.59  | 7.58  | 0.72  | 1.25 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |        |        |        |       |       |       |       |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 1.01   | 0.50   | 0.20   | 0.96  | 0.52  | 0.84  | 0.05  | 0.82   | 0.78   | 0.79   | 0.81   | 0.53   | 0.53   |
| d, Delay for Lane Group [s/veh]       | 54.03  | 28.43  | 25.33  | 38.22 | 29.65 | 37.60 | 23.89 | 63.09  | 25.22  | 28.49  | 56.41  | 18.84  | 3.04   |
| Lane Group LOS                        | F      | C      | C      | D     | C     | D     | C     | E      | C      | C      | E      | B      | A      |
| Critical Lane Group                   | No     | No     | No     | No    | No    | Yes   | No    | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.47   | 6.33   | 2.33   | 7.77  | 7.00  | 12.98 | 0.55  | 2.67   | 15.13  | 16.04  | 2.39   | 8.17   | 2.26   |
| 50th-Percentile Queue Length [ft/ln]  | 86.80  | 158.14 | 58.16  | 194.3 | 174.9 | 324.6 | 13.66 | 66.68  | 378.30 | 400.94 | 59.67  | 204.32 | 56.43  |
| 95th-Percentile Queue Length [veh/ln] | 6.25   | 10.45  | 4.19   | 12.34 | 11.33 | 18.89 | 0.98  | 4.80   | 21.51  | 22.61  | 4.30   | 12.86  | 4.06   |
| 95th-Percentile Queue Length [ft/ln]  | 156.24 | 261.26 | 104.69 | 308.6 | 283.3 | 472.3 | 24.59 | 120.02 | 537.79 | 565.14 | 107.40 | 321.54 | 101.57 |

**Movement, Approach, & Intersection Results**

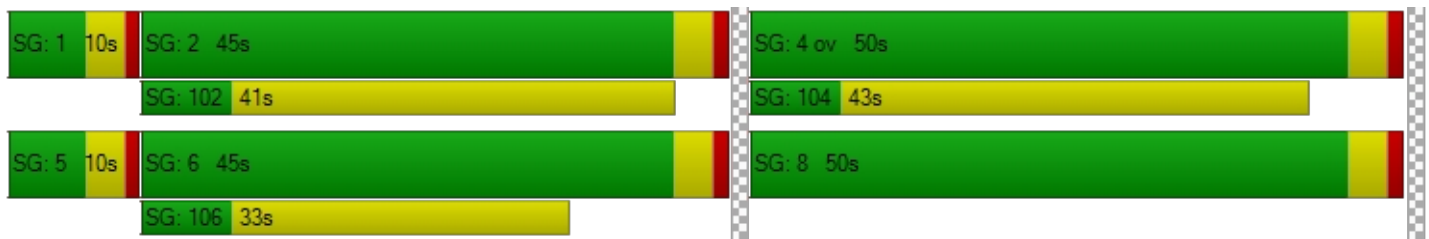
|                                 |       |       |       |       |       |       |       |       |       |       |       |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 54.03 | 28.43 | 25.33 | 35.36 | 37.60 | 23.89 | 63.09 | 25.97 | 28.49 | 56.41 | 18.84 | 3.04 |
| Movement LOS                    | F     | C     | C     | D     | D     | C     | E     | C     | C     | E     | B     | A    |
| d_A, Approach Delay [s/veh]     | 34.78 |       |       | 35.88 |       |       | 27.70 |       |       | 15.86 |       |      |
| Approach LOS                    | C     |       |       | D     |       |       | C     |       |       | B     |       |      |
| d_I, Intersection Delay [s/veh] | 26.35 |       |       |       |       |       |       |       |       |       |       |      |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |      |
| Intersection V/C                | 0.843 |       |       |       |       |       |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.07 | 42.07 | 42.07 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.883 | 3.041 | 3.558 | 0.000 |
| Crosswalk LOS  | C     | C     | D     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 876   | 876   | 781   | 781   |
| d_b, Bicycle Delay [s]                                   | 16.57 | 16.57 | 19.50 | 19.50 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.409 | 2.849 | 2.826 | 2.958 |
| Bicycle LOS  | B     | C     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





*APPENDIX D-V*

**YEAR 2045 TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**

**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 39.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.895 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                         |        |        |                         |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 194                     | 250    | 236    | 1011                    | 692    | 9      | 16           | 1577   | 238    | 542          | 1995   | 627    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 194                     | 250    | 236    | 1011                    | 692    | 9      | 16           | 1577   | 238    | 542          | 1995   | 627    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 49                      | 63     | 59     | 253                     | 173    | 2      | 4            | 394    | 60     | 136          | 499    | 157    |
| Total Analysis Volume [veh/h]               | 194                     | 250    | 236    | 1011                    | 692    | 9      | 16           | 1577   | 238    | 542          | 1995   | 627    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 13       | 15      | 0       | 42       | 44      | 0       | 10       | 39      | 0       | 24       | 53      | 53      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 0       | 0       | 0        | 33      | 0       | 0        | 28      | 0       | 0        | 22      | 22      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C     | C     | L     | C     | C     | L     | C     | R    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 |
| g_i, Effective Green Time [s]           | 9     | 12    | 12    | 12    | 37    | 40    | 40    | 3     | 35    | 35    | 20    | 52    | 94   |
| g / C, Green / Cycle                    | 0.07  | 0.10  | 0.10  | 0.10  | 0.31  | 0.34  | 0.34  | 0.02  | 0.29  | 0.29  | 0.17  | 0.44  | 0.78 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06  | 0.09  | 0.08  | 0.08  | 0.29  | 0.18  | 0.18  | 0.00  | 0.24  | 0.24  | 0.15  | 0.35  | 0.33 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 5700  | 1900  | 3500  | 5700  | 1900 |
| c, Capacity [veh/h]                     | 252   | 189   | 189   | 189   | 1083  | 641   | 641   | 76    | 1657  | 552   | 584   | 2486  | 1480 |
| d1, Uniform Delay [s]                   | 54.75 | 53.58 | 53.16 | 52.84 | 40.26 | 32.35 | 32.33 | 57.73 | 39.64 | 39.75 | 49.30 | 29.37 | 4.39 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.13  | 0.13  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               | 4.97  | 16.51 | 10.09 | 7.35  | 4.41  | 0.86  | 0.85  | 1.37  | 4.66  | 13.28 | 7.03  | 2.85  | 0.89 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |        |        |        |       |        |        |        |        |        |
|---------------------------------------|-------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.77  | 0.92  | 0.85  | 0.79  | 0.93   | 0.55   | 0.55   | 0.21  | 0.82   | 0.83   | 0.93   | 0.80   | 0.42   |
| d, Delay for Lane Group [s/veh]       | 59.72 | 70.09 | 63.25 | 60.20 | 44.67  | 33.21  | 33.18  | 59.10 | 44.30  | 53.03  | 56.33  | 32.22  | 5.28   |
| Lane Group LOS                        | E     | E     | E     | E     | D      | C      | C      | E     | D      | D      | E      | C      | A      |
| Critical Lane Group                   | No    | Yes   | No    | No    | Yes    | No     | No     | No    | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.06  | 6.09  | 5.30  | 4.82  | 14.98  | 8.42   | 8.40   | 0.25  | 13.05  | 14.51  | 8.55   | 16.91  | 4.54   |
| 50th-Percentile Queue Length [ft/ln]  | 76.41 | 152.2 | 132.5 | 120.5 | 374.55 | 210.59 | 210.07 | 6.34  | 326.13 | 362.81 | 213.85 | 422.78 | 113.58 |
| 95th-Percentile Queue Length [veh/ln] | 5.50  | 10.14 | 9.08  | 8.43  | 21.33  | 13.18  | 13.16  | 0.46  | 18.97  | 20.76  | 13.35  | 23.66  | 8.04   |
| 95th-Percentile Queue Length [ft/ln]  | 137.5 | 253.4 | 227.0 | 210.6 | 533.25 | 329.59 | 328.92 | 11.41 | 474.21 | 519.00 | 333.76 | 591.38 | 200.97 |

**Movement, Approach, & Intersection Results**

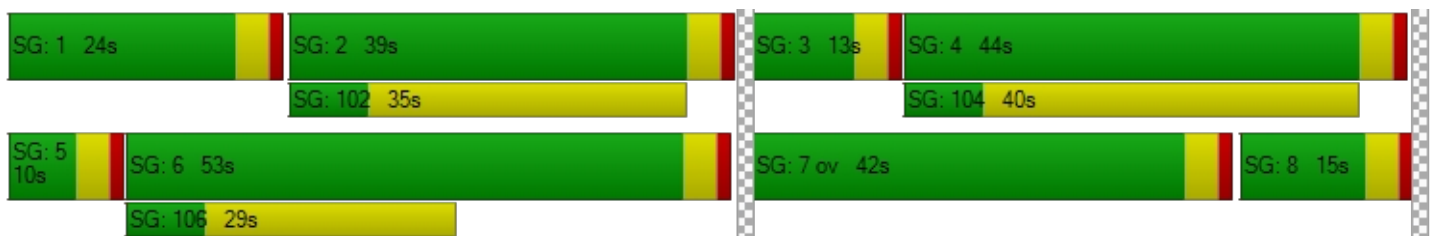
|                                 |       |       |       |       |       |       |       |       |       |       |       |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 59.72 | 68.03 | 61.20 | 44.67 | 33.20 | 33.18 | 59.10 | 45.51 | 53.03 | 56.33 | 32.22 | 5.28 |
| Movement LOS                    | E     | E     | E     | D     | C     | C     | E     | D     | D     | E     | C     | A    |
| d_A, Approach Delay [s/veh]     | 63.32 |       |       | 39.97 |       |       | 46.61 |       |       | 31.01 |       |      |
| Approach LOS                    | E     |       |       | D     |       |       | D     |       |       | C     |       |      |
| d_I, Intersection Delay [s/veh] | 39.93 |       |       |       |       |       |       |       |       |       |       |      |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |      |
| Intersection V/C                | 0.895 |       |       |       |       |       |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.907 | 2.890 | 3.299 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 183   | 666   | 583   | 816   |
| d_b, Bicycle Delay [s]                                   | 49.52 | 26.68 | 30.12 | 21.02 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.121 | 2.972 | 2.315 | 3.300 |
| Bicycle LOS  | B     | C     | B     | C     |

**Sequence**




|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.830 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps  |        |        | Lambert Road  |        |        | Lambert Road  |        |        |
|------------------------------|----------------|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound     |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |                |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1   | 0      | 1      | 0   | 0      | 1      | 1   | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 |                |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes            |        |        | Yes   |        |        | No  |        |        | No  |        |        |

**Volumes**

| Name  | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 0              | 0      | 0      | 1060           | 0      | 730    | 0            | 1937   | 650    | 269          | 2247   | 0      |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0              | 0      | 0      | 1060           | 0      | 730    | 0            | 1937   | 650    | 269          | 2247   | 0      |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0              | 0      | 0      | 265            | 0      | 183    | 0            | 484    | 163    | 67           | 562    | 0      |
| Total Analysis Volume [veh/h]               | 0              | 0      | 0      | 1060           | 0      | 730    | 0            | 1937   | 650    | 269          | 2247   | 0      |
| Presence of On-Street Parking               |                |        |        | No             |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 45    | 0       | 0     | 0       | 32      | 0       | 13       | 45      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 12      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              |  | L     | R     | C     | R     | L     | C     |
|---|--|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     |  | 90    | 90    | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           |  | 33    | 33    | 37    | 37    | 9     | 49    |
| g / C, Green / Cycle                    |  | 0.36  | 0.36  | 0.41  | 0.41  | 0.10  | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.30  | 0.19  | 0.34  | 0.17  | 0.08  | 0.39  |
| s, saturation flow rate [veh/h]         |  | 3500  | 3800  | 5700  | 3800  | 3500  | 5700  |
| c, Capacity [veh/h]                     |  | 1267  | 1376  | 2317  | 1545  | 344   | 3130  |
| d1, Uniform Delay [s]                   |  | 26.29 | 22.68 | 24.02 | 19.13 | 39.67 | 15.11 |
| k, delay calibration                    |  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  |
| l, Upstream Filtering Factor            |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               |  | 1.54  | 0.32  | 3.76  | 0.84  | 3.92  | 1.45  |
| d3, Initial Queue Delay [s]             |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |  |        |        |        |        |        |        |
|---------------------------------------|--|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  |  | 0.84   | 0.53   | 0.84   | 0.42   | 0.78   | 0.72   |
| d, Delay for Lane Group [s/veh]       |  | 27.83  | 23.00  | 27.78  | 19.97  | 43.59  | 16.55  |
| Lane Group LOS                        |  | C      | C      | C      | B      | D      | B      |
| Critical Lane Group                   |  | Yes    | No     | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] |  | 10.21  | 5.97   | 12.49  | 4.86   | 3.05   | 10.79  |
| 50th-Percentile Queue Length [ft/ln]  |  | 255.24 | 149.18 | 312.24 | 121.60 | 76.35  | 269.73 |
| 95th-Percentile Queue Length [veh/ln] |  | 15.45  | 9.97   | 18.29  | 8.48   | 5.50   | 16.18  |
| 95th-Percentile Queue Length [ft/ln]  |  | 386.25 | 249.34 | 457.14 | 212.02 | 137.43 | 404.40 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |       |       |       |       |       |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 27.83 | 0.00 | 23.00 | 0.00  | 27.78 | 19.97 | 43.59 | 16.55 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | C     | B     | D     | B     |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 25.86 |      |       | 25.82 |       |       | 19.44 |       |      |
| Approach LOS                    | A     |      |      | C     |      |       | C     |       |       | B     |       |      |
| d_I, Intersection Delay [s/veh] | 23.50 |      |      |       |      |       |       |       |       |       |       |      |
| Intersection LOS                | C     |      |      |       |      |       |       |       |       |       |       |      |
| Intersection V/C                | 0.830 |      |      |       |      |       |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.162 | 2.567 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 911   | 622   | 911   |
| d_b, Bicycle Delay [s]                                   | 45.01 | 13.35 | 21.37 | 13.35 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 1.560 | 2.982 | 2.943 |
| Bicycle LOS  | D     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 21.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.840 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐            |        |        |                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No             |        |        |                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 1104           | 0      | 527    | 0              | 0      | 0      | 0            | 2563   | 424    | 0            | 1412   | 511    |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 1104           | 0      | 527    | 0              | 0      | 0      | 0            | 2563   | 424    | 0            | 1412   | 511    |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]              | 276            | 0      | 132    | 0              | 0      | 0      | 0            | 641    | 106    | 0            | 353    | 0      |
| Total Analysis Volume [veh/h]               | 1104           | 0      | 527    | 0              | 0      | 0      | 0            | 2563   | 424    | 0            | 1412   | 0      |
| Presence of On-Street Parking               | No             |        | No     |                |        |        | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Split | Permiss | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Unsigna |
|------------------------------|-------|---------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 3     | 0       | 0     | 0       | 0       | 0       | 0       | 2       | 0       | 0       | 6       | 0       |         |
| Auxiliary Signal Groups      |       |         |       |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag                   | Lead  | -       | -     | -       | -       | -       | -       | -       | -       | -       | -       | -       |         |
| Minimum Green [s]            | 6     | 0       | 0     | 0       | 0       | 0       | 0       | 6       | 0       | 0       | 6       | 0       |         |
| Maximum Green [s]            | 30    | 0       | 0     | 0       | 0       | 0       | 0       | 30      | 0       | 0       | 30      | 0       |         |
| Amber [s]                    | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |         |
| All red [s]                  | 1.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |         |
| Split [s]                    | 54    | 0       | 0     | 0       | 0       | 0       | 0       | 36      | 0       | 0       | 36      | 0       |         |
| Vehicle Extension [s]        | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |         |
| Walk [s]                     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 7       | 0       | 0       | 0       | 0       |         |
| Pedestrian Clearance [s]     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 25      | 0       | 0       | 0       | 0       |         |
| Delayed Vehicle Green [s]    | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |         |
| Rest In Walk                 | No    |         |       |         |         |         |         | No      |         |         | No      |         |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |         |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |         |
| Minimum Recall               | No    |         |       |         |         |         |         | No      |         |         | No      |         |         |
| Maximum Recall               | No    |         |       |         |         |         |         | No      |         |         | No      |         |         |
| Pedestrian Recall            | No    |         |       |         |         |         |         | No      |         |         | No      |         |         |
| Detector Location [ft]       | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |         |
| Detector Length [ft]         | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |         |
| I, Upstream Filtering Factor | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |         |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | R     |  | C     | C     | R     | C     |
|---|-------|-------|--|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    |  | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 34    | 34    |  | 48    | 48    | 48    | 48    |
| g / C, Green / Cycle                    | 0.37  | 0.37  |  | 0.54  | 0.54  | 0.54  | 0.54  |
| (v / s)_i Volume / Saturation Flow Rate | 0.32  | 0.28  |  | 0.45  | 0.45  | 0.22  | 0.25  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 3800  | 1900  | 1900  | 5700  |
| c, Capacity [veh/h]                     | 1309  | 710   |  | 2041  | 1020  | 1020  | 3061  |
| d1, Uniform Delay [s]                   | 25.72 | 24.36 |  | 17.49 | 17.49 | 12.39 | 12.80 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.50  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.57  | 1.55  |  | 4.29  | 8.17  | 1.25  | 0.50  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |  |        |        |        |        |
|---------------------------------------|--------|--------|--|--------|--------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.74   |  | 0.84   | 0.84   | 0.42   | 0.46   |
| d, Delay for Lane Group [s/veh]       | 27.29  | 25.92  |  | 21.78  | 25.66  | 13.64  | 13.30  |
| Lane Group LOS                        | C      | C      |  | C      | C      | B      | B      |
| Critical Lane Group                   | Yes    | No     |  | Yes    | No     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 10.56  | 9.60   |  | 14.71  | 15.81  | 5.10   | 5.58   |
| 50th-Percentile Queue Length [ft/ln]  | 263.93 | 239.92 |  | 367.66 | 395.14 | 127.43 | 139.50 |
| 95th-Percentile Queue Length [veh/ln] | 15.89  | 14.68  |  | 21.00  | 22.33  | 8.80   | 9.45   |
| 95th-Percentile Queue Length [ft/ln]  | 397.15 | 366.93 |  | 524.89 | 558.14 | 220.00 | 236.35 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |      |      |       |       |       |       |       |      |
|---------------------------------|-------|------|-------|------|------|------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 27.29 | 0.00 | 25.92 | 0.00 | 0.00 | 0.00 | 0.00  | 22.64 | 13.64 | 0.00  | 13.30 | 0.00 |
| Movement LOS                    | C     |      | C     |      |      |      |       | C     | B     |       | B     |      |
| d_A, Approach Delay [s/veh]     | 26.84 |      |       | 0.00 |      |      | 21.73 |       |       | 13.30 |       |      |
| Approach LOS                    | C     |      |       | A    |      |      | C     |       |       | B     |       |      |
| d_I, Intersection Delay [s/veh] | 21.14 |      |       |      |      |      |       |       |       |       |       |      |
| Intersection LOS                | C     |      |       |      |      |      |       |       |       |       |       |      |
| Intersection V/C                | 0.840 |      |       |      |      |      |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.63 | 0.00  | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.700 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | F     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1112  | 0     | 712   | 712   |
| d_b, Bicycle Delay [s]                                   | 8.86  | 44.96 | 18.65 | 18.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.560 | 4.132 | 3.202 | 2.336 |
| Bicycle LOS  | A     | D     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report  
Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 14.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.646 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | +            |        |        | +            |        |        | +            |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No           |        |        | No           |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name  | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2563   | 42     | 18           | 1915   | 192    |
| Base Volume Input [veh/h]                   | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2563   | 42     | 18           | 1915   | 192    |
| Base Volume Adjustment Factor               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2563   | 42     | 18           | 1915   | 192    |
| Peak Hour Factor                            | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 2            | 2      | 2      | 17           | 0      | 34     | 146          | 641    | 11     | 5            | 479    | 48     |
| Total Analysis Volume [veh/h]               | 9            | 8      | 7      | 69           | 1      | 137    | 585          | 2563   | 42     | 18           | 1915   | 192    |
| Presence of On-Street Parking               | No           |        | No     | No           |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 44      | 0       | 0       | 44      | 0       | 40       | 38      | 0       | 33       | 31      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 33      | 0       | 0       | 0       | 0       | 0        | 14      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L     | C    | C    | L     | C     | C     |
|---|-------|-------|-------|-------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115  | 115  | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 7     | 7     | 7     | 22    | 94   | 94   | 3     | 74    | 74    |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.06  | 0.19  | 0.81 | 0.81 | 0.02  | 0.64  | 0.64  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.04  | 0.04  | 0.17  | 0.45 | 0.47 | 0.01  | 0.37  | 0.37  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 3500  | 3800 | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 150   | 169   | 225   | 676   | 3090 | 1545 | 42    | 2444  | 1222  |
| d1, Uniform Delay [s]                   | 51.56 | 52.93 | 52.78 | 44.93 | 3.65 | 3.80 | 55.40 | 11.59 | 11.67 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.49  | 1.62  | 2.64  | 3.49  | 0.72 | 1.60 | 6.83  | 0.98  | 2.01  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |        |        |        |       |        |        |
|---------------------------------------|-------|-------|-------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.16  | 0.41  | 0.61  | 0.87   | 0.55   | 0.58   | 0.43  | 0.57   | 0.58   |
| d, Delay for Lane Group [s/veh]       | 52.06 | 54.55 | 55.42 | 48.41  | 4.37   | 5.40   | 62.23 | 12.57  | 13.68  |
| Lane Group LOS                        | D     | D     | E     | D      | A      | A      | E     | B      | B      |
| Critical Lane Group                   | No    | Yes   | No    | Yes    | No     | No     | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 0.68  | 2.05  | 2.01  | 8.36   | 5.08   | 5.91   | 0.59  | 9.76   | 10.29  |
| 50th-Percentile Queue Length [ft/ln]  | 17.04 | 51.37 | 50.33 | 209.10 | 126.93 | 147.78 | 14.86 | 243.93 | 257.17 |
| 95th-Percentile Queue Length [veh/ln] | 1.23  | 3.70  | 3.62  | 13.11  | 8.77   | 9.90   | 1.07  | 14.88  | 15.55  |
| 95th-Percentile Queue Length [ft/ln]  | 30.66 | 92.46 | 90.59 | 327.67 | 219.31 | 247.46 | 26.74 | 372.00 | 388.67 |

**Movement, Approach, & Intersection Results**

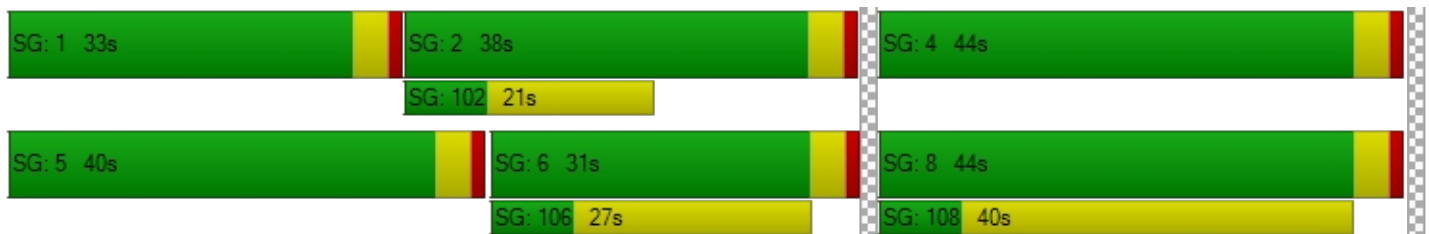
|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.06 | 52.06 | 52.06 | 54.55 | 54.55 | 55.42 | 48.41 | 4.71 | 5.40 | 62.23 | 12.87 | 13.68 |
| Movement LOS                    | D     | D     | D     | D     | D     | E     | D     | A    | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 52.06 |       |       | 55.12 |       |       | 12.74 |      |      | 13.36 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | B     |      |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 14.73 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | B     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.646 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.02 | 47.02 | 0.00  | 47.02 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.768 | 2.505 | 0.000 | 3.367 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 696   | 696   | 591   | 470   |
| d_b, Bicycle Delay [s]                                   | 24.45 | 24.45 | 28.52 | 33.66 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.599 | 1.901 | 3.314 | 2.728 |
| Bicycle LOS  | A     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 34.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.890 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No          |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |             |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 169               | 322    | 11     | 125         | 218    | 405    | 500          | 2031   | 173    | 23           | 1470   | 183    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 169               | 322    | 11     | 125         | 218    | 405    | 500          | 2031   | 173    | 23           | 1470   | 183    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 42                | 81     | 3      | 31          | 55     | 101    | 125          | 508    | 43     | 6            | 368    | 46     |
| Total Analysis Volume [veh/h]               | 169               | 322    | 11     | 125         | 218    | 405    | 500          | 2031   | 173    | 23           | 1470   | 183    |
| Presence of On-Street Parking               | No                |        | No     | No          |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 14       | 27      | 0       | 17       | 30      | 0       | 19       | 41      | 0       | 10       | 32      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 16      | 0       | 0        | 19      | 0       | 0        | 20      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 10    | 24    | 24    | 8     | 22    | 22    | 15    | 44    | 44    | 3     | 32    | 32    |
| g / C, Green / Cycle                    | 0.11  | 0.25  | 0.25  | 0.09  | 0.24  | 0.24  | 0.16  | 0.46  | 0.46  | 0.03  | 0.33  | 0.33  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.09  | 0.09  | 0.07  | 0.11  | 0.21  | 0.14  | 0.36  | 0.09  | 0.01  | 0.29  | 0.29  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1900  | 1900  | 3500  | 5700  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 191   | 482   | 482   | 158   | 448   | 448   | 554   | 2622  | 874   | 54    | 1261  | 630   |
| d1, Uniform Delay [s]                   | 41.98 | 29.05 | 29.02 | 42.53 | 31.38 | 35.31 | 39.33 | 21.55 | 15.26 | 45.34 | 29.95 | 29.86 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.21  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 12.75 | 0.43  | 0.42  | 8.46  | 0.82  | 12.47 | 5.76  | 2.31  | 0.51  | 5.21  | 8.71  | 15.17 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.89   | 0.35   | 0.34   | 0.79   | 0.49   | 0.90   | 0.90   | 0.77   | 0.20   | 0.43  | 0.88   | 0.87   |
| d, Delay for Lane Group [s/veh]       | 54.73  | 29.48  | 29.45  | 50.99  | 32.20  | 47.78  | 45.09  | 23.86  | 15.77  | 50.56 | 38.66  | 45.03  |
| Lane Group LOS                        | D      | C      | C      | D      | C      | D      | D      | C      | B      | D     | D      | D      |
| Critical Lane Group                   | Yes    | No     | No     | No     | No     | Yes    | Yes    | No     | No     | No    | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.54   | 3.14   | 3.11   | 3.22   | 4.36   | 10.45  | 6.09   | 12.52  | 2.29   | 0.61  | 13.02  | 14.04  |
| 50th-Percentile Queue Length [ft/ln]  | 113.58 | 78.47  | 77.70  | 80.56  | 108.95 | 261.21 | 152.19 | 312.93 | 57.18  | 15.21 | 325.57 | 351.09 |
| 95th-Percentile Queue Length [veh/ln] | 8.04   | 5.65   | 5.59   | 5.80   | 7.78   | 15.75  | 10.13  | 18.32  | 4.12   | 1.10  | 18.94  | 20.19  |
| 95th-Percentile Queue Length [ft/ln]  | 200.97 | 141.24 | 139.86 | 145.00 | 194.54 | 393.73 | 253.35 | 457.99 | 102.92 | 27.38 | 473.53 | 504.74 |

**Movement, Approach, & Intersection Results**

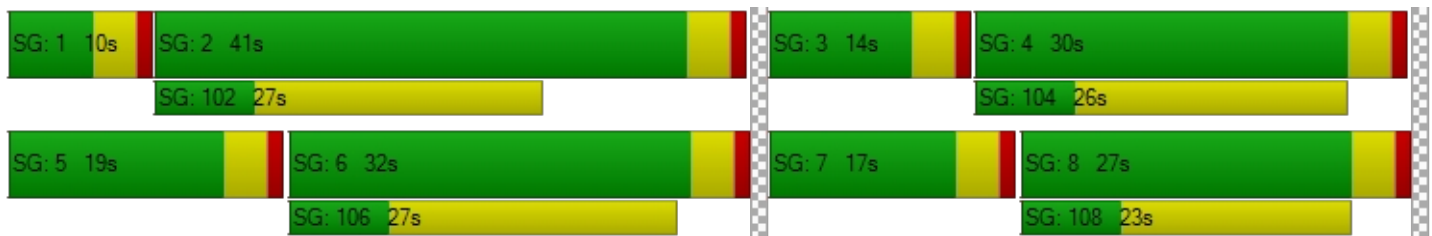
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 54.73 | 29.46 | 29.45 | 50.99 | 32.20 | 47.78 | 45.09 | 23.86 | 15.77 | 50.56 | 40.24 | 45.03 |
| Movement LOS                    | D     | C     | C     | D     | C     | D     | D     | C     | B     | D     | D     | D     |
| d_A, Approach Delay [s/veh]     | 37.97 |       |       | 43.77 |       |       | 27.27 |       |       | 40.91 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 34.47 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.890 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.18 | 37.18 | 37.18 | 37.18 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.481 | 2.644 | 3.366 | 3.131 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 484   | 547   | 778   | 589   |
| d_b, Bicycle Delay [s]                                   | 27.32 | 25.09 | 17.74 | 23.66 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.974 | 2.177 | 3.047 | 2.481 |
| Bicycle LOS  | A     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 29.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.763 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No            |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 322               | 130    | 34     | 22            | 236    | 373    | 111          | 777    | 1240   | 277          | 869    | 14     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 322               | 130    | 34     | 22            | 236    | 373    | 111          | 777    | 1240   | 277          | 869    | 14     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 81                | 33     | 9      | 6             | 59     | 93     | 28           | 194    | 310    | 69           | 217    | 4      |
| Total Analysis Volume [veh/h]               | 322               | 130    | 34     | 22            | 236    | 373    | 111          | 777    | 1240   | 277          | 869    | 14     |
| Presence of On-Street Parking               | No                |        | No     | No            |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 6        | 6       | 0       | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 30       | 30      | 0       | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 16       | 49      | 49      | 10       | 43      | 0       | 19       | 37      | 37      | 14       | 32      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0        | 7       | 0       | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 30      | 30      | 0        | 31      | 0       | 0        | 26      | 26      | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Maximum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 12    | 33    | 48    | 3     | 24    | 24    | 9     | 48    | 64    | 10    | 49    | 49    |
| g / C, Green / Cycle                    | 0.11  | 0.30  | 0.43  | 0.03  | 0.22  | 0.22  | 0.08  | 0.43  | 0.58  | 0.09  | 0.45  | 0.45  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.07  | 0.02  | 0.01  | 0.12  | 0.20  | 0.06  | 0.20  | 0.33  | 0.08  | 0.15  | 0.16  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 3800  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 384   | 578   | 821   | 50    | 423   | 423   | 140   | 1638  | 2193  | 320   | 1690  | 845   |
| d1, Uniform Delay [s]                   | 48.06 | 28.60 | 18.08 | 52.68 | 38.01 | 41.42 | 49.89 | 22.39 | 14.62 | 49.34 | 20.03 | 20.18 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.13  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.95  | 0.20  | 0.02  | 5.99  | 1.16  | 7.36  | 9.61  | 0.99  | 1.06  | 6.96  | 0.56  | 1.18  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |       |       |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.22   | 0.04  | 0.44  | 0.56   | 0.88   | 0.79   | 0.47   | 0.57   | 0.86   | 0.34   | 0.36   |
| d, Delay for Lane Group [s/veh]       | 53.01  | 28.80  | 18.10 | 58.67 | 39.17  | 48.78  | 59.50  | 23.38  | 15.68  | 56.30  | 20.58  | 21.36  |
| Lane Group LOS                        | D      | C      | B     | E     | D      | D      | E      | C      | B      | E      | C      | C      |
| Critical Lane Group                   | Yes    | No     | No    | No    | No     | Yes    | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.58   | 2.60   | 0.51  | 0.68  | 5.77   | 10.56  | 3.37   | 7.30   | 9.55   | 4.05   | 4.95   | 5.34   |
| 50th-Percentile Queue Length [ft/ln]  | 114.50 | 64.92  | 12.65 | 17.03 | 144.16 | 264.03 | 84.22  | 182.44 | 238.83 | 101.35 | 123.69 | 133.42 |
| 95th-Percentile Queue Length [veh/ln] | 8.09   | 4.67   | 0.91  | 1.23  | 9.70   | 15.89  | 6.06   | 11.73  | 14.62  | 7.30   | 8.60   | 9.13   |
| 95th-Percentile Queue Length [ft/ln]  | 202.25 | 116.85 | 22.77 | 30.65 | 242.61 | 397.27 | 151.60 | 293.19 | 365.55 | 182.44 | 214.89 | 228.14 |

**Movement, Approach, & Intersection Results**

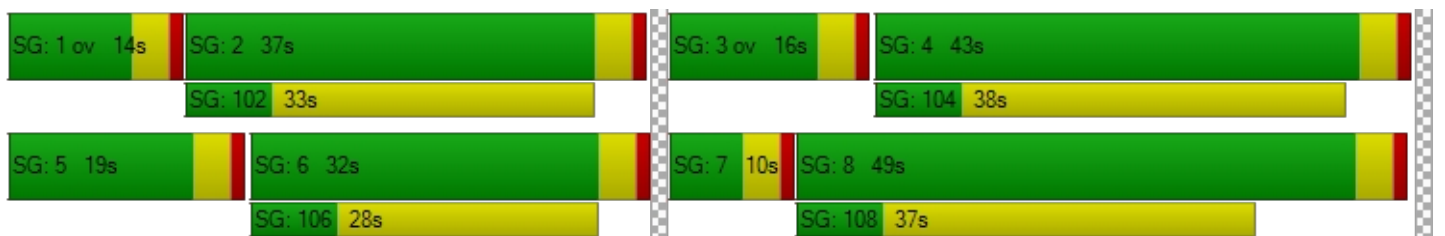
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 53.01 | 28.80 | 18.10 | 58.67 | 39.17 | 48.78 | 59.50 | 23.38 | 15.68 | 56.30 | 20.84 | 21.36 |
| Movement LOS                    | D     | C     | B     | E     | D     | D     | E     | C     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 44.09 |       |       | 45.53 |       |       | 20.78 |       |       | 29.31 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 29.14 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.763 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.58 | 44.58 | 44.58 | 44.58 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.826 | 2.357 | 3.185 | 2.881 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 818   | 709   | 600   | 509   |
| d_b, Bicycle Delay [s]                                   | 19.23 | 22.94 | 26.97 | 30.59 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.362 | 2.601 | 3.315 | 2.198 |
| Bicycle LOS  | B     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 7.1   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.309 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No               |        |        | No               |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |



**Volumes**

| Name  | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 48               | 6      | 19     | 5                | 0      | 6      | 7            | 828    | 51     | 26           | 1143   | 2      |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 48               | 6      | 19     | 5                | 0      | 6      | 7            | 828    | 51     | 26           | 1143   | 2      |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 12               | 2      | 5      | 1                | 0      | 2      | 2            | 207    | 13     | 7            | 286    | 1      |
| Total Analysis Volume [veh/h]               | 48               | 6      | 19     | 5                | 0      | 6      | 7            | 828    | 51     | 26           | 1143   | 2      |
| Presence of On-Street Parking               | No               |        | No     | No               |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 6       | 0       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 30      | 0       | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 40      | 0       | 40      | 0       | 0       | 10       | 30      | 0       | 10       | 30      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 7       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 29      | 0       | 29      | 0       | 0       | 0        | 18      | 0       | 0        | 16      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         | No      |         |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 2     | 2     | 1     | 93   | 93   | 4     | 95   | 95   |
| g / C, Green / Cycle                    | 0.05  | 0.05  | 0.02  | 0.02  | 0.01  | 0.78 | 0.78 | 0.03  | 0.79 | 0.79 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03  | 0.01  | 0.00  | 0.00  | 0.00  | 0.23 | 0.23 | 0.01  | 0.20 | 0.21 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 83    | 87    | 28    | 30    | 20    | 1473 | 1473 | 53    | 3017 | 1509 |
| d1, Uniform Delay [s]                   | 56.12 | 55.35 | 58.29 | 58.31 | 58.94 | 3.95 | 3.93 | 57.36 | 3.18 | 3.21 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 6.26  | 1.77  | 2.88  | 3.19  | 10.63 | 0.53 | 0.51 | 6.86  | 0.20 | 0.42 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |       |       |       |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
| X, volume / capacity                  | 0.58  | 0.29  | 0.18  | 0.20  | 0.36  | 0.30   | 0.30   | 0.49  | 0.25  | 0.26  |
| d, Delay for Lane Group [s/veh]       | 62.38 | 57.12 | 61.18 | 61.51 | 69.58 | 4.48   | 4.44   | 64.22 | 3.37  | 3.64  |
| Lane Group LOS                        | E     | E     | E     | E     | E     | A      | A      | E     | A     | A     |
| Critical Lane Group                   | Yes   | No    | No    | Yes   | No    | Yes    | No     | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.57  | 0.78  | 0.17  | 0.21  | 0.27  | 2.87   | 2.79   | 0.88  | 1.94  | 2.15  |
| 50th-Percentile Queue Length [ft/ln]  | 39.26 | 19.40 | 4.32  | 5.17  | 6.73  | 71.74  | 69.85  | 21.97 | 48.43 | 53.67 |
| 95th-Percentile Queue Length [veh/ln] | 2.83  | 1.40  | 0.31  | 0.37  | 0.48  | 5.17   | 5.03   | 1.58  | 3.49  | 3.86  |
| 95th-Percentile Queue Length [ft/ln]  | 70.68 | 34.91 | 7.78  | 9.31  | 12.12 | 129.13 | 125.74 | 39.54 | 87.17 | 96.60 |

**Movement, Approach, & Intersection Results**

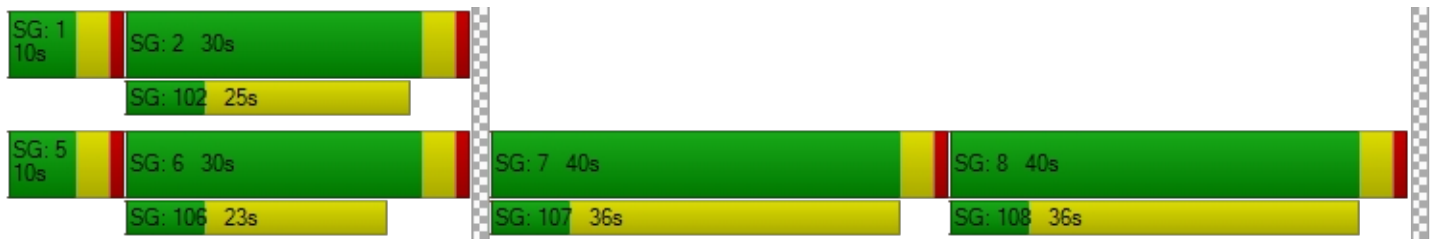
|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 62.38 | 57.12 | 57.12 | 61.18 | 0.00 | 61.51 | 69.58 | 4.46 | 4.44 | 64.22 | 3.46 | 3.64 |
| Movement LOS                    | E     | E     | E     | E     |      | E     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 60.58 |       |       | 61.36 |      |       | 4.97  |      |      | 4.81  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 7.07  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.309 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.003 | 1.962 | 2.805 | 2.795 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 600   | 600   | 433   | 433   |
| d_b, Bicycle Delay [s]                                   | 29.41 | 29.41 | 36.82 | 36.82 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.680 | 1.560 | 2.291 | 2.204 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 157.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.045 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound          |        |        |
| Lane Configuration           |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 0      | 1            | 0      | 0      | 1                  | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00               |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No                 |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes                |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 316             | 208    | 174    | 8               | 422    | 48     | 56           | 248    | 572    | 1063               | 909    | 2      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 316             | 208    | 174    | 8               | 422    | 48     | 56           | 248    | 572    | 1063               | 909    | 2      |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 79              | 52     | 44     | 2               | 106    | 12     | 14           | 62     | 143    | 266                | 227    | 1      |
| Total Analysis Volume [veh/h]               | 316             | 208    | 174    | 8               | 422    | 48     | 56           | 248    | 572    | 1063               | 909    | 2      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Unsigna | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 16       | 49      | 0       | 10       | 43      | 0       | 12       | 36      | 0       | 25       | 49      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 31      | 0       | 0        | 32      | 0       | 0        | 25      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L      | C     | L     | C     | C     | L     | C     | C     | L      | C     | C     |
|---|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| C, Cycle Length [s]                     | 120    | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120    | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00   | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 12     | 28    | 1     | 18    | 18    | 5     | 53    | 53    | 21     | 69    | 69    |
| g / C, Green / Cycle                    | 0.10   | 0.24  | 0.01  | 0.15  | 0.15  | 0.04  | 0.44  | 0.44  | 0.18   | 0.58  | 0.58  |
| (v / s)_i Volume / Saturation Flow Rate | 0.18   | 0.05  | 0.00  | 0.13  | 0.12  | 0.03  | 0.07  | 0.30  | 0.30   | 0.16  | 0.17  |
| s, saturation flow rate [veh/h]         | 1800   | 3800  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500   | 3800  | 1900  |
| c, Capacity [veh/h]                     | 181    | 896   | 23    | 281   | 281   | 78    | 1684  | 842   | 613    | 2186  | 1093  |
| d1, Uniform Delay [s]                   | 54.00  | 37.10 | 58.78 | 49.84 | 49.65 | 56.73 | 19.91 | 26.63 | 49.51  | 12.85 | 12.97 |
| k, delay calibration                    | 0.23   | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.16   | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 346.30 | 0.13  | 8.95  | 7.00  | 6.08  | 11.87 | 0.18  | 4.39  | 332.32 | 0.31  | 0.66  |
| d3, Initial Queue Delay [s]             | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| PF, progression factor                  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |       |        |        |       |       |        |         |        |        |
|---------------------------------------|--------|--------|-------|--------|--------|-------|-------|--------|---------|--------|--------|
| X, volume / capacity                  | 1.75   | 0.23   | 0.35  | 0.85   | 0.83   | 0.72  | 0.15  | 0.68   | 1.73    | 0.27   | 0.29   |
| d, Delay for Lane Group [s/veh]       | 400.30 | 37.23  | 67.73 | 56.84  | 55.73  | 68.60 | 20.10 | 31.02  | 381.84  | 13.16  | 13.63  |
| Lane Group LOS                        | F      | D      | E     | E      | E      | E     | C     | C      | F       | B      | B      |
| Critical Lane Group                   | Yes    | No     | No    | Yes    | No     | No    | No    | Yes    | Yes     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 22.86  | 2.50   | 0.30  | 7.50   | 7.22   | 1.93  | 2.12  | 13.85  | 37.45   | 4.08   | 4.42   |
| 50th-Percentile Queue Length [ft/ln]  | 571.56 | 62.57  | 7.45  | 187.46 | 180.44 | 48.35 | 53.03 | 346.19 | 936.37  | 102.05 | 110.61 |
| 95th-Percentile Queue Length [veh/ln] | 36.31  | 4.50   | 0.54  | 11.99  | 11.62  | 3.48  | 3.82  | 19.95  | 58.45   | 7.35   | 7.87   |
| 95th-Percentile Queue Length [ft/ln]  | 907.74 | 112.62 | 13.42 | 299.73 | 290.59 | 87.03 | 95.45 | 498.76 | 1461.20 | 183.69 | 196.85 |



**Movement, Approach, & Intersection Results**

|                                 |        |       |      |       |       |       |       |       |       |        |       |       |
|---------------------------------|--------|-------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| d_M, Delay for Movement [s/veh] | 400.30 | 37.23 | 0.00 | 67.73 | 56.36 | 55.73 | 68.60 | 20.10 | 31.02 | 381.84 | 13.32 | 13.63 |
| Movement LOS                    | F      | D     |      | E     | E     | E     | E     | C     | C     | F      | B     | B     |
| d_A, Approach Delay [s/veh]     | 256.18 |       |      | 56.49 |       |       | 30.33 |       |       | 211.77 |       |       |
| Approach LOS                    | F      |       |      | E     |       |       | C     |       |       | F      |       |       |
| d_I, Intersection Delay [s/veh] | 157.28 |       |      |       |       |       |       |       |       |        |       |       |
| Intersection LOS                | F      |       |      |       |       |       |       |       |       |        |       |       |
| Intersection V/C                | 1.045  |       |      |       |       |       |       |       |       |        |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.886 | 2.459 | 2.907 | 3.011 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 750   | 650   | 533   | 750   |
| d_b, Bicycle Delay [s]                                   | 23.45 | 27.35 | 32.28 | 23.45 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.992 | 1.954 | 2.041 | 2.645 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.2   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.612 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ↱             |        |        | ↵↶                 |        |        | ↵↷                 |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Curb Present                 | No            |        |        | No            |        |        | No                 |        |        | No                 |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name  | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
|   |               |        |        |               |        |        |                    |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 5             | 1      | 1      | 0             | 0      | 29     | 22                 | 415    | 8      | 7                  | 1989   | 6      |
| Base Volume Adjustment Factor               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 5             | 1      | 1      | 0             | 0      | 29     | 22                 | 415    | 8      | 7                  | 1989   | 6      |
| Peak Hour Factor                            | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 1             | 0      | 0      | 0             | 0      | 7      | 6                  | 104    | 2      | 2                  | 497    | 2      |
| Total Analysis Volume [veh/h]               | 5             | 1      | 1      | 0             | 0      | 29     | 22                 | 415    | 8      | 7                  | 1989   | 6      |
| Presence of On-Street Parking               | No            |        | No     | No            |        | No     | No                 |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 0       | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 0       | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 0.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 35      | 0       | 0       | 0       | 35      | 10       | 60      | 0       | 25       | 75      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 24      | 0       | 0       | 0       | 0       | 0        | 17      | 0       | 0        | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         |         | No      |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 4     | 4     | 3     | 103  | 103  | 1     | 101  | 101  |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.03  | 0.86 | 0.86 | 0.01  | 0.84 | 0.84 |
| (v / s)_i Volume / Saturation Flow Rate | 0.00  | 0.02  | 0.01  | 0.11 | 0.11 | 0.00  | 0.52 | 0.00 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900 | 1900 | 1900  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 108   | 60    | 47    | 1630 | 1630 | 21    | 3200 | 1600 |
| d1, Uniform Delay [s]                   | 56.50 | 57.15 | 57.56 | 1.37 | 1.37 | 58.90 | 3.13 | 1.50 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.25  | 6.02  | 6.87  | 0.17 | 0.16 | 9.39  | 0.92 | 0.00 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |       |        |      |
|---------------------------------------|-------|-------|-------|-------|-------|-------|--------|------|
| X, volume / capacity                  | 0.06  | 0.49  | 0.46  | 0.13  | 0.13  | 0.34  | 0.62   | 0.00 |
| d, Delay for Lane Group [s/veh]       | 56.75 | 63.17 | 64.43 | 1.53  | 1.53  | 68.30 | 4.05   | 1.50 |
| Lane Group LOS                        | E     | E     | E     | A     | A     | E     | A      | A    |
| Critical Lane Group                   | No    | Yes   | Yes   | No    | No    | No    | Yes    | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.21  | 0.97  | 0.75  | 0.51  | 0.51  | 0.27  | 5.33   | 0.02 |
| 50th-Percentile Queue Length [ft/ln]  | 5.35  | 24.14 | 18.73 | 12.86 | 12.79 | 6.63  | 133.37 | 0.40 |
| 95th-Percentile Queue Length [veh/ln] | 0.39  | 1.74  | 1.35  | 0.93  | 0.92  | 0.48  | 9.12   | 0.03 |
| 95th-Percentile Queue Length [ft/ln]  | 9.64  | 43.46 | 33.72 | 23.15 | 23.02 | 11.93 | 228.07 | 0.72 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 56.75 | 56.75 | 56.75 | 0.00  | 0.00 | 63.17 | 64.43 | 1.53 | 1.53 | 68.30 | 4.05 | 1.50 |
| Movement LOS                    | E     | E     | E     |       |      | E     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 56.75 |       |       | 63.17 |      |       | 4.64  |      |      | 4.27  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 5.17  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.612 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.50 | 49.50 | 0.00  | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.739 | 1.757 | 0.000 | 2.860 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 517   | 517   | 933   | 1184  |
| d_b, Bicycle Delay [s]                                   | 33.00 | 33.00 | 17.06 | 10.00 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.571 | 1.560 | 1.927 | 3.211 |
| Bicycle LOS  | A     | A     | A     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 48.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.868 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | [Symbol]                |        |        | [Symbol]                |        |        | [Symbol]     |        |        | [Symbol]     |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 88                      | 177    | 112    | 776                     | 976    | 254    | 125          | 576    | 68     | 92           | 651    | 338    |
| Base Volume Input [veh/h]                   | 88                      | 177    | 112    | 776                     | 976    | 254    | 125          | 576    | 68     | 92           | 651    | 338    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 88                      | 177    | 112    | 776                     | 976    | 254    | 125          | 576    | 68     | 92           | 651    | 338    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 22                      | 44     | 28     | 194                     | 244    | 64     | 31           | 144    | 17     | 23           | 163    | 85     |
| Total Analysis Volume [veh/h]               | 88                      | 177    | 112    | 776                     | 976    | 254    | 125          | 576    | 68     | 92           | 651    | 338    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 32       | 61      | 0       | 10       | 39      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 30      | 0       | 0        | 28      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 35    | 35    | 28    | 57    | 57    | 6     | 35    | 35    | 6     | 35    | 35    |
| g / C, Green / Cycle                    | 0.05  | 0.29  | 0.29  | 0.23  | 0.48  | 0.48  | 0.05  | 0.29  | 0.29  | 0.05  | 0.29  | 0.29  |
| (v / s)_i Volume / Saturation Flow Rate | 0.03  | 0.05  | 0.06  | 0.22  | 0.51  | 0.13  | 0.04  | 0.15  | 0.04  | 0.03  | 0.17  | 0.18  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 166   | 1103  | 552   | 817   | 905   | 905   | 175   | 1122  | 561   | 167   | 1113  | 557   |
| d1, Uniform Delay [s]                   | 55.86 | 31.69 | 32.11 | 45.31 | 31.42 | 18.99 | 56.16 | 35.12 | 30.90 | 55.88 | 36.19 | 36.48 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.12  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 2.63  | 0.07  | 0.18  | 6.94  | 41.10 | 0.17  | 5.33  | 1.68  | 0.44  | 2.82  | 2.25  | 4.86  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |        |        |        |        |       |        |       |       |        |        |
|---------------------------------------|-------|-------|--------|--------|--------|--------|-------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.53  | 0.16  | 0.20   | 0.95   | 1.08   | 0.28   | 0.71  | 0.51   | 0.12  | 0.55  | 0.58   | 0.61   |
| d, Delay for Lane Group [s/veh]       | 58.48 | 31.76 | 32.29  | 52.25  | 72.52  | 19.16  | 61.49 | 36.80  | 31.34 | 58.71 | 38.44  | 41.34  |
| Lane Group LOS                        | E     | C     | C      | D      | F      | B      | E     | D      | C     | E     | D      | D      |
| Critical Lane Group                   | Yes   | No    | No     | No     | Yes    | No     | Yes   | No     | No    | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 1.36  | 1.94  | 2.50   | 12.09  | 17.74  | 4.31   | 2.00  | 7.26   | 1.52  | 1.43  | 8.48   | 9.26   |
| 50th-Percentile Queue Length [ft/ln]  | 34.09 | 48.41 | 62.43  | 302.24 | 443.45 | 107.70 | 49.88 | 181.59 | 38.09 | 35.72 | 212.01 | 231.61 |
| 95th-Percentile Queue Length [veh/ln] | 2.45  | 3.49  | 4.49   | 17.79  | 26.01  | 7.71   | 3.59  | 11.68  | 2.74  | 2.57  | 13.26  | 14.26  |
| 95th-Percentile Queue Length [ft/ln]  | 61.36 | 87.14 | 112.37 | 444.79 | 650.20 | 192.80 | 89.78 | 292.09 | 68.56 | 64.30 | 331.41 | 356.41 |

**Movement, Approach, & Intersection Results**

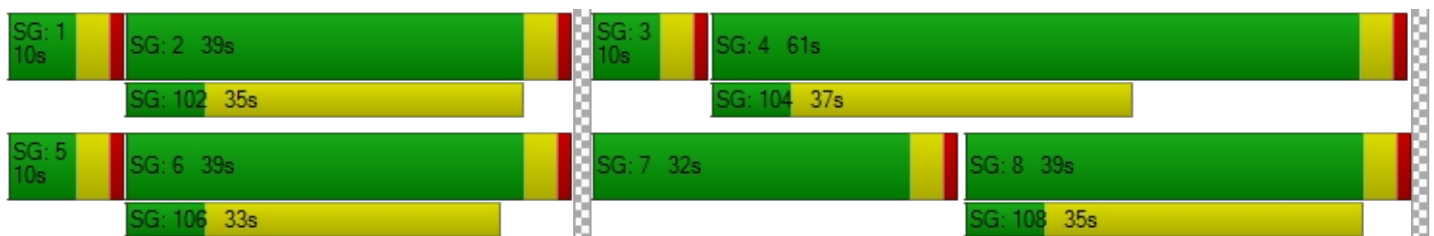
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 58.48 | 31.76 | 32.29 | 52.25 | 72.52 | 19.16 | 61.49 | 36.80 | 31.34 | 58.71 | 38.44 | 41.34 |
| Movement LOS                    | E     | C     | C     | D     | F     | B     | E     | D     | C     | E     | D     | D     |
| d_A, Approach Delay [s/veh]     | 38.16 |       |       | 57.92 |       |       | 40.33 |       |       | 41.07 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | D     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 48.66 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.868 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.50 | 49.50 | 49.50 | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.818 | 2.976 | 2.853 | 2.962 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 583   | 950   | 583   | 583   |
| d_b, Bicycle Delay [s]                                   | 30.10 | 16.54 | 30.10 | 30.10 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.871 | 3.215 | 2.194 | 2.451 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.771 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T               |        |        | T T          |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 286               | 7      | 357    | 63                | 34     | 11     | 5            | 1094   | 374    | 389          | 872    | 11     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 286               | 7      | 357    | 63                | 34     | 11     | 5            | 1094   | 374    | 389          | 872    | 11     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 72                | 2      | 89     | 16                | 9      | 3      | 1            | 274    | 94     | 97           | 218    | 3      |
| Total Analysis Volume [veh/h]               | 286               | 7      | 357    | 63                | 34     | 11     | 5            | 1094   | 374    | 389          | 872    | 11     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 24       | 61      | 61      | 0       | 37      | 0       | 10       | 38      | 0       | 21       | 49      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 26      | 0       | 26      | 0       | 0        | 27      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | C     | L     | C    | C    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 12    | 22    | 43    | 6     | 6     | 1     | 69    | 69    | 17    | 85   | 85   |
| g / C, Green / Cycle                    | 0.10  | 0.19  | 0.36  | 0.05  | 0.05  | 0.01  | 0.57  | 0.57  | 0.14  | 0.71 | 0.71 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.00  | 0.19  | 0.04  | 0.02  | 0.00  | 0.40  | 0.37  | 0.11  | 0.23 | 0.23 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1800  | 1900  | 1900  | 3500  | 1900 | 1900 |
| c, Capacity [veh/h]                     | 354   | 353   | 686   | 120   | 98    | 15    | 1087  | 1087  | 496   | 1341 | 1341 |
| d1, Uniform Delay [s]                   | 52.79 | 39.91 | 30.16 | 55.96 | 55.31 | 59.20 | 18.28 | 17.53 | 49.73 | 6.77 | 6.76 |
| k, delay calibration                    | 0.11  | 0.11  | 0.27  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.36  | 0.02  | 1.52  | 3.55  | 3.35  | 13.08 | 3.72  | 3.05  | 2.76  | 0.66 | 0.66 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |       |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.81   | 0.02  | 0.52   | 0.53  | 0.46  | 0.34  | 0.70   | 0.65   | 0.78   | 0.33   | 0.33   |
| d, Delay for Lane Group [s/veh]       | 57.15  | 39.93 | 31.68  | 59.50 | 58.66 | 72.29 | 22.00  | 20.59  | 52.49  | 7.43   | 7.42   |
| Lane Group LOS                        | E      | D     | C      | E     | E     | E     | C      | C      | D      | A      | A      |
| Critical Lane Group                   | No     | No    | Yes    | No    | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.43   | 0.17  | 8.39   | 1.99  | 1.42  | 0.20  | 15.47  | 13.80  | 5.82   | 4.23   | 4.21   |
| 50th-Percentile Queue Length [ft/ln]  | 110.80 | 4.32  | 209.72 | 49.86 | 35.39 | 5.12  | 386.65 | 344.98 | 145.51 | 105.70 | 105.14 |
| 95th-Percentile Queue Length [veh/ln] | 7.88   | 0.31  | 13.14  | 3.59  | 2.55  | 0.37  | 21.92  | 19.89  | 9.78   | 7.60   | 7.57   |
| 95th-Percentile Queue Length [ft/ln]  | 197.11 | 7.77  | 328.47 | 89.75 | 63.71 | 9.21  | 547.89 | 497.29 | 244.43 | 190.00 | 189.23 |

**Movement, Approach, & Intersection Results**

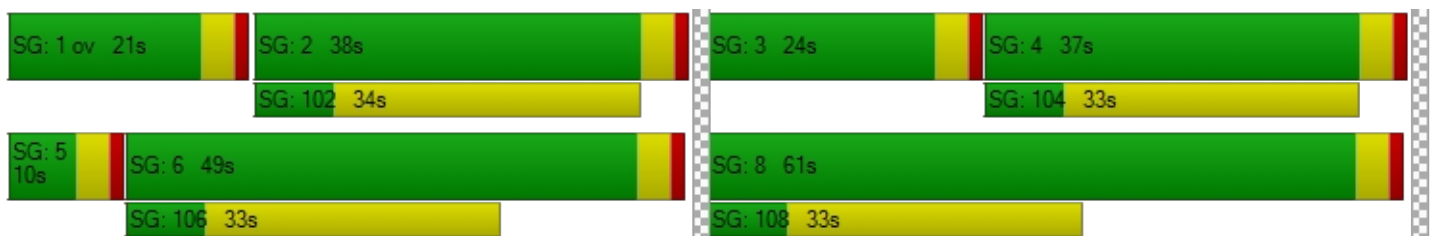
|                                 |       |       |       |       |       |       |       |       |       |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.15 | 39.93 | 31.68 | 59.50 | 58.66 | 58.66 | 72.29 | 21.56 | 20.59 | 52.49 | 7.42 | 7.42 |
| Movement LOS                    | E     | D     | C     | E     | E     | E     | E     | C     | C     | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 42.97 |       |       | 59.15 |       |       | 21.49 |       |       | 21.21 |      |      |
| Approach LOS                    | D     |       |       | E     |       |       | C     |       |       | C     |      |      |
| d_I, Intersection Delay [s/veh] | 26.53 |       |       |       |       |       |       |       |       |       |      |      |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |      |      |
| Intersection V/C                | 0.771 |       |       |       |       |       |       |       |       |       |      |      |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.51 |  |  | 49.51 |  |  | 49.51 |  |  | 49.51 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.702 |  |  | 1.997 |  |  | 2.829 |  |  | 3.009 |  |  |
| Crosswalk LOS  | B     |  |  | A     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 950   |  |  | 550   |  |  | 567   |  |  | 750   |  |  |
| d_b, Bicycle Delay [s]                                   | 16.54 |  |  | 31.54 |  |  | 30.82 |  |  | 23.44 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.632 |  |  | 1.738 |  |  | 2.775 |  |  | 2.609 |  |  |
| Bicycle LOS  | B     |  |  | A     |  |  | C     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |









**Intersection Level Of Service Report**

**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.731 |

**Intersection Setup**

| Name                         | N Associated Road   |        |        | N Associated Road   |        |        | Birch Street  |        |        | Birch Street  |        |        |
|------------------------------|---|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |  |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1      | 1   | 0      | 1      | 1   | 0      | 0      | 1   | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 | No  |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes   |        |        | Yes   |        |        | Yes   |        |        | No  |        |        |

**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 3                 | 3      | 6      | 187               | 2      | 524    | 371          | 1006   | 19     | 9            | 829    | 99     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 3                 | 3      | 6      | 187               | 2      | 524    | 371          | 1006   | 19     | 9            | 829    | 99     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 1                 | 1      | 2      | 47                | 1      | 131    | 93           | 252    | 5      | 2            | 207    | 25     |
| Total Analysis Volume [veh/h]               | 3                 | 3      | 6      | 187               | 2      | 524    | 371          | 1006   | 19     | 9            | 829    | 99     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 44       | 39      | 0       | 37       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 2     | 2     | 2     | 25    | 25    | 63    | 28    | 75    | 75    | 2     | 49    | 49    |
| g / C, Green / Cycle                    | 0.02  | 0.02  | 0.02  | 0.21  | 0.21  | 0.53  | 0.24  | 0.63  | 0.63  | 0.01  | 0.41  | 0.41  |
| (v / s)_i Volume / Saturation Flow Rate | 0.00  | 0.00  | 0.00  | 0.05  | 0.05  | 0.28  | 0.21  | 0.27  | 0.27  | 0.01  | 0.22  | 0.05  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 67    | 33    | 33    | 373   | 373   | 1000  | 423   | 1194  | 1194  | 25    | 1547  | 773   |
| d1, Uniform Delay [s]                   | 58.05 | 58.05 | 58.14 | 39.83 | 39.83 | 18.60 | 44.23 | 11.37 | 11.35 | 58.67 | 27.00 | 22.27 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.18  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.28  | 1.17  | 2.58  | 0.35  | 0.35  | 1.96  | 9.21  | 1.13  | 1.12  | 8.46  | 1.34  | 0.34  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |        |        |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.05  | 0.09  | 0.18  | 0.25   | 0.25   | 0.52   | 0.88   | 0.43   | 0.43   | 0.36  | 0.54   | 0.13  |
| d, Delay for Lane Group [s/veh]       | 58.33 | 59.21 | 60.72 | 40.18  | 40.18  | 20.56  | 53.44  | 12.51  | 12.47  | 67.12 | 28.33  | 22.61 |
| Lane Group LOS                        | E     | E     | E     | D      | D      | C      | D      | B      | B      | E     | C      | C     |
| Critical Lane Group                   | No    | No    | Yes   | No     | No     | Yes    | Yes    | No     | No     | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.09  | 0.10  | 0.20  | 2.38   | 2.39   | 9.89   | 11.65  | 7.06   | 7.01   | 0.33  | 9.24   | 1.84  |
| 50th-Percentile Queue Length [ft/ln]  | 2.37  | 2.51  | 5.09  | 59.58  | 59.63  | 247.25 | 291.37 | 176.57 | 175.27 | 8.26  | 230.91 | 45.91 |
| 95th-Percentile Queue Length [veh/ln] | 0.17  | 0.18  | 0.37  | 4.29   | 4.29   | 15.05  | 17.25  | 11.42  | 11.35  | 0.59  | 14.22  | 3.31  |
| 95th-Percentile Queue Length [ft/ln]  | 4.27  | 4.52  | 9.16  | 107.25 | 107.34 | 376.19 | 431.34 | 285.53 | 283.83 | 14.86 | 355.51 | 82.64 |

**Movement, Approach, & Intersection Results**

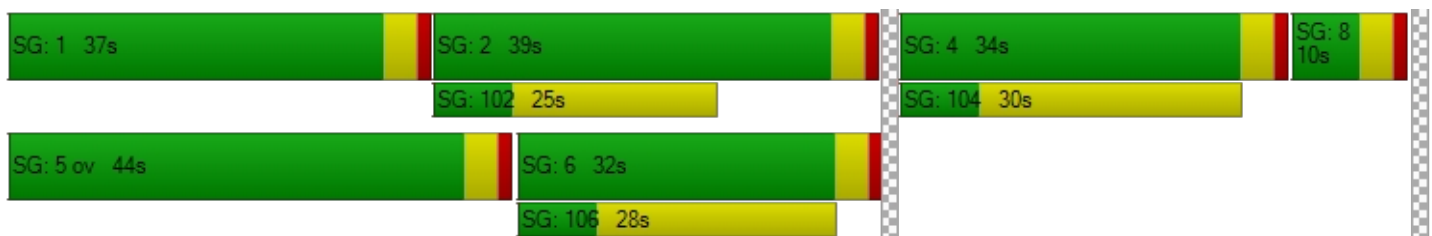
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 58.33 | 59.21 | 60.72 | 40.18 | 40.18 | 20.56 | 53.44 | 12.49 | 12.47 | 67.12 | 28.33 | 22.61 |
| Movement LOS                    | E     | E     | E     | D     | D     | C     | D     | B     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 59.74 |       |       | 25.76 |       |       | 23.37 |       |       | 28.10 |       |       |
| Approach LOS                    | E     |       |       | C     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 25.52 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.731 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.155 | 2.434 | 2.855 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 100   | 500   | 583   | 467   |
| d_b, Bicycle Delay [s]                                   | 54.17 | 33.76 | 30.12 | 35.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.579 | 2.736 | 2.711 | 2.333 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 36.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.613 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 155               | 243    | 106    | 504               | 1161   | 210    | 50           | 673    | 388    | 72           | 493    | 240    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 155               | 243    | 106    | 504               | 1161   | 210    | 50           | 673    | 388    | 72           | 493    | 240    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 39                | 61     | 27     | 126               | 290    | 53     | 13           | 168    | 97     | 18           | 123    | 60     |
| Total Analysis Volume [veh/h]               | 155               | 243    | 106    | 504               | 1161   | 210    | 50           | 673    | 388    | 72           | 493    | 240    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 11       | 37      | 0       | 34       | 60      | 0       | 10       | 39      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 0       | 0        | 26      | 0       | 0        | 28      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 7     | 21    | 21    | 20    | 34    | 34    | 5     | 57    | 57    | 6     | 58    | 58    |
| g / C, Green / Cycle                    | 0.06  | 0.17  | 0.17  | 0.17  | 0.28  | 0.28  | 0.04  | 0.48  | 0.48  | 0.05  | 0.49  | 0.49  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.06  | 0.06  | 0.14  | 0.24  | 0.24  | 0.03  | 0.18  | 0.20  | 0.04  | 0.13  | 0.13  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 1800  | 3800  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 207   | 659   | 330   | 586   | 1070  | 535   | 75    | 1806  | 903   | 91    | 1841  | 921   |
| d1, Uniform Delay [s]                   | 55.61 | 43.73 | 43.61 | 48.63 | 40.89 | 40.58 | 56.74 | 20.09 | 20.77 | 56.35 | 18.33 | 18.25 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.39  | 0.33  | 0.62  | 3.86  | 2.17  | 3.64  | 9.96  | 0.59  | 1.49  | 13.83 | 0.36  | 0.69  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.75   | 0.36   | 0.34   | 0.86   | 0.86   | 0.84   | 0.67  | 0.37   | 0.43   | 0.79   | 0.27   | 0.26   |
| d, Delay for Lane Group [s/veh]       | 61.00  | 44.06  | 44.23  | 52.49  | 43.05  | 44.22  | 66.70 | 20.68  | 22.27  | 70.17  | 18.68  | 18.94  |
| Lane Group LOS                        | E      | D      | D      | D      | D      | D      | E     | C      | C      | E      | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No    | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.47   | 3.13   | 3.03   | 7.64   | 13.13  | 12.96  | 1.70  | 6.11   | 7.49   | 2.51   | 4.13   | 4.10   |
| 50th-Percentile Queue Length [ft/ln]  | 61.64  | 78.33  | 75.67  | 191.01 | 328.31 | 323.92 | 42.56 | 152.81 | 187.15 | 62.73  | 103.35 | 102.41 |
| 95th-Percentile Queue Length [veh/ln] | 4.44   | 5.64   | 5.45   | 12.17  | 19.08  | 18.86  | 3.06  | 10.17  | 11.97  | 4.52   | 7.44   | 7.37   |
| 95th-Percentile Queue Length [ft/ln]  | 110.96 | 141.00 | 136.21 | 304.34 | 476.89 | 471.50 | 76.61 | 254.18 | 299.33 | 112.92 | 186.03 | 184.35 |

**Movement, Approach, & Intersection Results**

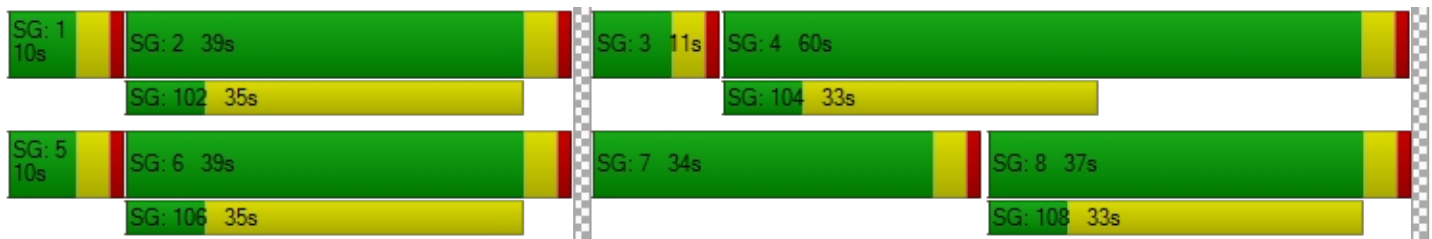
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 61.00 | 44.06 | 44.23 | 52.49 | 43.29 | 44.22 | 66.70 | 20.68 | 22.27 | 70.17 | 18.68 | 18.94 |
| Movement LOS                    | E     | D     | D     | D     | D     | D     | E     | C     | C     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 49.31 |       |       | 45.87 |       |       | 23.31 |       |       | 23.36 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 36.22 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.613 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.998 |  |  | 3.033 |  |  | 2.787 |  |  | 2.806 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 550   |  |  | 933   |  |  | 583   |  |  | 583   |  |  |
| d_b, Bicycle Delay [s]                                   | 31.55 |  |  | 17.08 |  |  | 30.12 |  |  | 30.12 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.837 |  |  | 2.591 |  |  | 2.476 |  |  | 2.224 |  |  |
| Bicycle LOS  | A     |  |  | B     |  |  | B     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 118.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.878 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 155             | 251    | 16     | 860             | 939    | 292    | 72           | 529    | 149    | 15         | 407    | 365    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 155             | 251    | 16     | 860             | 939    | 292    | 72           | 529    | 149    | 15         | 407    | 365    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 39              | 63     | 4      | 215             | 235    | 73     | 18           | 132    | 37     | 4          | 102    | 91     |
| Total Analysis Volume [veh/h]               | 155             | 251    | 16     | 860             | 939    | 292    | 72           | 529    | 149    | 15         | 407    | 365    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 18       | 38      | 0       | 36       | 56      | 0       | 10       | 36      | 0       | 10       | 36      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L      | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120    | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 12    | 23    | 23    | 32     | 42    | 42    | 6     | 47    | 47    | 2     | 44    | 44    |
| g / C, Green / Cycle                    | 0.10  | 0.19  | 0.19  | 0.27   | 0.35  | 0.35  | 0.05  | 0.39  | 0.39  | 0.02  | 0.37  | 0.37  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.07  | 0.07  | 0.48   | 0.32  | 0.32  | 0.02  | 0.18  | 0.17  | 0.01  | 0.11  | 0.19  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800   | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 183   | 358   | 358   | 480    | 671   | 671   | 162   | 743   | 743   | 37    | 1389  | 694   |
| d1, Uniform Delay [s]                   | 53.00 | 42.54 | 42.49 | 44.04  | 37.14 | 37.14 | 55.75 | 27.31 | 26.88 | 58.07 | 27.07 | 29.92 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50   | 0.26  | 0.26  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 10.20 | 0.65  | 0.64  | 365.16 | 11.85 | 11.85 | 1.91  | 2.15  | 1.88  | 6.93  | 0.54  | 2.84  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |        |       |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|--------|-------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.85   | 0.38   | 0.37   | 1.79    | 0.92   | 0.92   | 0.44  | 0.47   | 0.44   | 0.40  | 0.29   | 0.53   |
| d, Delay for Lane Group [s/veh]       | 63.20  | 43.19  | 43.13  | 409.19  | 48.99  | 48.99  | 57.66 | 29.46  | 28.76  | 65.00 | 27.61  | 32.76  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D      | E     | C      | C      | E     | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes     | No     | No     | Yes   | No     | No     | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 5.11   | 3.56   | 3.51   | 62.75   | 19.21  | 19.21  | 1.11  | 7.95   | 7.25   | 0.52  | 4.26   | 8.79   |
| 50th-Percentile Queue Length [ft/ln]  | 127.76 | 89.10  | 87.72  | 1568.86 | 480.37 | 480.37 | 27.65 | 198.64 | 181.19 | 13.05 | 106.58 | 219.82 |
| 95th-Percentile Queue Length [veh/ln] | 8.82   | 6.42   | 6.32   | 97.54   | 26.40  | 26.40  | 1.99  | 12.57  | 11.66  | 0.94  | 7.65   | 13.66  |
| 95th-Percentile Queue Length [ft/ln]  | 220.45 | 160.38 | 157.90 | 2438.57 | 660.10 | 660.10 | 49.78 | 314.20 | 291.57 | 23.49 | 191.24 | 341.40 |

**Movement, Approach, & Intersection Results**

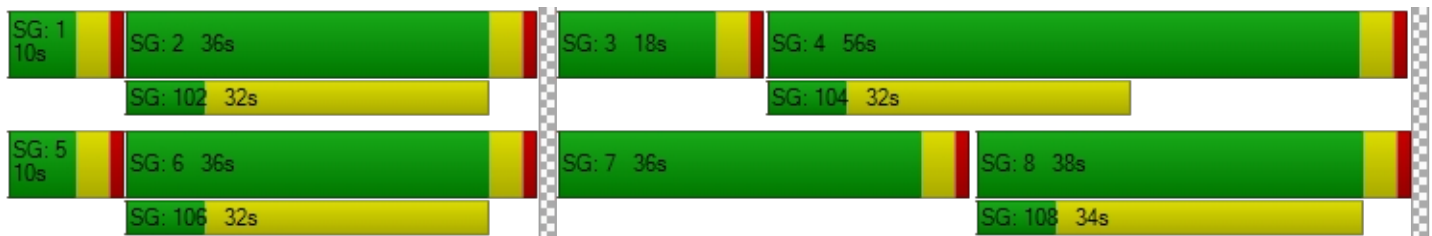
|                                 |        |       |       |        |       |       |       |       |       |       |       |       |
|---------------------------------|--------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 63.20  | 43.16 | 43.13 | 409.19 | 48.99 | 48.99 | 57.66 | 29.23 | 28.76 | 65.00 | 27.61 | 32.76 |
| Movement LOS                    | E      | D     | D     | F      | D     | D     | E     | C     | C     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 50.52  |       |       | 197.13 |       |       | 31.86 |       |       | 30.71 |       |       |
| Approach LOS                    | D      |       |       | F      |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 118.91 |       |       |        |       |       |       |       |       |       |       |       |
| Intersection LOS                | F      |       |       |        |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.878  |       |       |        |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.611 |  |  | 2.856 |  |  | 2.727 |  |  | 2.823 |  |  |
| Crosswalk LOS  | B     |  |  | C     |  |  | B     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 567   |  |  | 866   |  |  | 533   |  |  | 533   |  |  |
| d_b, Bicycle Delay [s]                                   | 30.83 |  |  | 19.28 |  |  | 32.28 |  |  | 32.28 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.908 |  |  | 3.285 |  |  | 2.178 |  |  | 2.209 |  |  |
| Bicycle LOS  | A     |  |  | C     |  |  | B     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 24.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.955 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           | ↵↑         |        | ↑↘         |        | ↵              |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Curb Present                 | No         |        | No         |        | No             |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |



**Volumes**

| Name  | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
|   |            |        |            |        |                |        |
| Base Volume Input [veh/h]                   | 54         | 792    | 1410       | 67     | 61             | 207    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0              | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]                 | 54         | 792    | 1410       | 67     | 61             | 207    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 14         | 198    | 353        | 17     | 15             | 52     |
| Total Analysis Volume [veh/h]               | 54         | 792    | 1410       | 67     | 61             | 207    |
| Presence of On-Street Parking               | No         | No     | No         | No     | No             | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0          | 0      | 0              | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        | 0          |        | 0              |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        | 0          |        | 0              |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]                 | 0          |        | 0          |        | 0              |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|------------|------------|------------|------------|------------|------------|
| Signal Group                 | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |            |            |            |            |            |            |
| Lead / Lag                   | -          | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 0          | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 0          | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 0.0        | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 0          | 94         | 94         | 0          | 26         | 0          |
| Vehicle Extension [s]        | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0          | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0          | 0          | 14         | 0          | 15         | 0          |
| Delayed Vehicle Green [s]    | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |            | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               |            | No         | No         |            | No         |            |
| Maximum Recall               |            | No         | No         |            | No         |            |
| Pedestrian Recall            |            | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C     | R    | C     |
|---|------|------|-------|------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120   | 120  | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00  | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00  | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00  | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           | 92   | 92   | 92    | 92   | 20    |
| g / C, Green / Cycle                    | 0.77 | 0.77 | 0.77  | 0.77 | 0.16  |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.42 | 0.74  | 0.04 | 0.15  |
| s, saturation flow rate [veh/h]         | 1800 | 1900 | 1900  | 1900 | 1800  |
| c, Capacity [veh/h]                     | 230  | 1462 | 1462  | 1462 | 294   |
| d1, Uniform Delay [s]                   | 3.27 | 5.45 | 12.32 | 3.29 | 49.24 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50  | 0.50 | 0.15  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  |
| d2, Incremental Delay [s]               | 2.38 | 1.44 | 16.41 | 0.06 | 14.11 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00  | 0.00 | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  |

**Lane Group Results**

|                                       |       |        |         |       |        |
|---------------------------------------|-------|--------|---------|-------|--------|
| X, volume / capacity                  | 0.23  | 0.54   | 0.96    | 0.05  | 0.91   |
| d, Delay for Lane Group [s/veh]       | 5.66  | 6.89   | 28.72   | 3.35  | 63.36  |
| Lane Group LOS                        | A     | A      | C       | A     | E      |
| Critical Lane Group                   | No    | No     | Yes     | No    | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 0.42  | 7.10   | 32.89   | 0.36  | 9.01   |
| 50th-Percentile Queue Length [ft/ln]  | 10.48 | 177.51 | 822.19  | 8.93  | 225.35 |
| 95th-Percentile Queue Length [veh/ln] | 0.75  | 11.47  | 42.29   | 0.64  | 13.94  |
| 95th-Percentile Queue Length [ft/ln]  | 18.87 | 286.76 | 1057.31 | 16.07 | 348.45 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |       |       |
|---------------------------------|-------|------|-------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 5.66  | 6.89 | 28.72 | 3.35 | 63.36 | 63.36 |
| Movement LOS                    | A     | A    | C     | A    | E     | E     |
| d_A, Approach Delay [s/veh]     | 6.81  |      | 27.57 |      | 63.36 |       |
| Approach LOS                    | A     |      | C     |      | E     |       |
| d_I, Intersection Delay [s/veh] | 24.50 |      |       |      |       |       |
| Intersection LOS                | C     |      |       |      |       |       |
| Intersection V/C                | 0.955 |      |       |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.45 | 0.00  | 49.45 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.754 | 0.000 | 1.995 |
| Crosswalk LOS  | C     | F     | A     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1501  | 1501  | 367   |
| d_b, Bicycle Delay [s]                                   | 3.73  | 3.73  | 39.97 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.956 | 3.997 | 2.002 |
| Bicycle LOS  | C     | D     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 15.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.683 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐              |        |        | ⇐                |        |        | ⇐         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Curb Present                 |                |        |        | No               |        |        | No               |        |        | No        |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name  |        |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |        |        |        |                |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 0      | 0      | 0      | 682            | 0      | 572    | 0                | 1739   | 830    | 0                | 2223   | 220    |
| Base Volume Adjustment Factor               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00   | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0      | 0      | 0      | 682            | 0      | 572    | 0                | 1739   | 830    | 0                | 2223   | 220    |
| Peak Hour Factor                            | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0      | 0      | 0      | 171            | 0      | 143    | 0                | 435    | 208    | 0                | 556    | 55     |
| Total Analysis Volume [veh/h]               | 0      | 0      | 0      | 682            | 0      | 572    | 0                | 1739   | 830    | 0                | 2223   | 220    |
| Presence of On-Street Parking               |        |        |        | No             |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 64    | 0       | 0     | 0       | 26      | 0       | 0       | 26      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 15      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | C    | C     |
|---|-------|-------|-------|------|-------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90   | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           | 25    | 25    | 25    | 57   | 57    |
| g / C, Green / Cycle                    | 0.28  | 0.28  | 0.28  | 0.63 | 0.63  |
| (v / s)_i Volume / Saturation Flow Rate | 0.23  | 0.23  | 0.22  | 0.31 | 0.39  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 5700 | 5700  |
| c, Capacity [veh/h]                     | 504   | 504   | 532   | 3597 | 3597  |
| d1, Uniform Delay [s]                   | 30.33 | 30.33 | 29.86 | 8.80 | 10.02 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  |
| d2, Incremental Delay [s]               | 3.59  | 3.59  | 2.61  | 0.47 | 0.81  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.83   | 0.83   | 0.79   | 0.48   | 0.62   |
| d, Delay for Lane Group [s/veh]       | 33.92  | 33.92  | 32.47  | 9.27   | 10.83  |
| Lane Group LOS                        | C      | C      | C      | A      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 8.72   | 8.72   | 8.47   | 5.45   | 7.97   |
| 50th-Percentile Queue Length [ft/ln]  | 217.90 | 217.90 | 211.78 | 136.18 | 199.36 |
| 95th-Percentile Queue Length [veh/ln] | 13.56  | 13.56  | 13.24  | 9.27   | 12.61  |
| 95th-Percentile Queue Length [ft/ln]  | 338.95 | 338.95 | 331.11 | 231.87 | 315.13 |



**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |      |      |      |       |       |      |
|---------------------------------|-------|------|------|-------|------|-------|------|------|------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 33.92 | 0.00 | 32.86 | 0.00 | 9.27 | 0.00 | 0.00  | 10.83 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |      | A    |      |       | B     |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 33.44 |      |       | 9.27 |      |      | 10.83 |       |      |
| Approach LOS                    | A     |      |      | C     |      |       | A    |      |      | B     |       |      |
| d_I, Intersection Delay [s/veh] | 15.74 |      |      |       |      |       |      |      |      |       |       |      |
| Intersection LOS                | B     |      |      |       |      |       |      |      |      |       |       |      |
| Intersection V/C                | 0.683 |      |      |       |      |       |      |      |      |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 0.000 | 2.436 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                   | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 3.629 | 2.516 | 2.782 |
| Bicycle LOS  | D     | D     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.694 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No             |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]                   | 1153           | 43     | 945    | 0               | 0      | 51     | 118              | 1549   | 636    | 0                | 1730   | 18     |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 1153           | 43     | 945    | 0               | 0      | 51     | 118              | 1549   | 636    | 0                | 1730   | 18     |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 288            | 11     | 236    | 0               | 0      | 13     | 30               | 387    | 159    | 0                | 433    | 5      |
| Total Analysis Volume [veh/h]               | 1153           | 43     | 945    | 0               | 0      | 51     | 118              | 1549   | 636    | 0                | 1730   | 18     |
| Presence of On-Street Parking               | No             |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0       | 6     | 6        | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0       | 30    | 30       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0     | 1.0   | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0     | 48    | 0     | 0     | 0       | 10    | 12       | 42      | 0       | 0       | 30      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 22      | 0       | 0       | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       |         | No    |          | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Maximum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Pedestrian Recall            |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | R     | L     | C     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 36    | 36    | 36    | 5     | 8     | 47    | 35    | 35    |
| g / C, Green / Cycle                    | 0.36  | 0.36  | 0.36  | 0.05  | 0.08  | 0.47  | 0.35  | 0.35  |
| (v / s)_i Volume / Saturation Flow Rate | 0.30  | 0.30  | 0.29  | 0.01  | 0.07  | 0.27  | 0.23  | 0.23  |
| s, saturation flow rate [veh/h]         | 3500  | 1800  | 1900  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 1275  | 656   | 692   | 177   | 145   | 2675  | 1987  | 662   |
| d1, Uniform Delay [s]                   | 28.95 | 28.97 | 28.33 | 46.13 | 45.28 | 19.37 | 27.60 | 27.60 |
| k, delay calibration                    | 0.11  | 0.22  | 0.19  | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.43  | 5.38  | 3.49  | 0.89  | 10.30 | 0.92  | 1.74  | 5.10  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.83   | 0.83   | 0.78   | 0.29  | 0.81   | 0.58   | 0.66   | 0.66   |
| d, Delay for Lane Group [s/veh]       | 30.39  | 34.35  | 31.82  | 47.02 | 55.57  | 20.29  | 29.34  | 32.70  |
| Lane Group LOS                        | C      | C      | C      | D     | E      | C      | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes   | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 11.41  | 12.48  | 11.91  | 0.63  | 3.28   | 8.64   | 8.95   | 9.57   |
| 50th-Percentile Queue Length [ft/ln]  | 285.27 | 311.93 | 297.83 | 15.82 | 81.99  | 215.94 | 223.75 | 239.22 |
| 95th-Percentile Queue Length [veh/ln] | 16.95  | 18.27  | 17.57  | 1.14  | 5.90   | 13.46  | 13.86  | 14.64  |
| 95th-Percentile Queue Length [ft/ln]  | 423.77 | 456.75 | 439.34 | 28.47 | 147.58 | 336.44 | 346.40 | 366.05 |

**Movement, Approach, & Intersection Results**

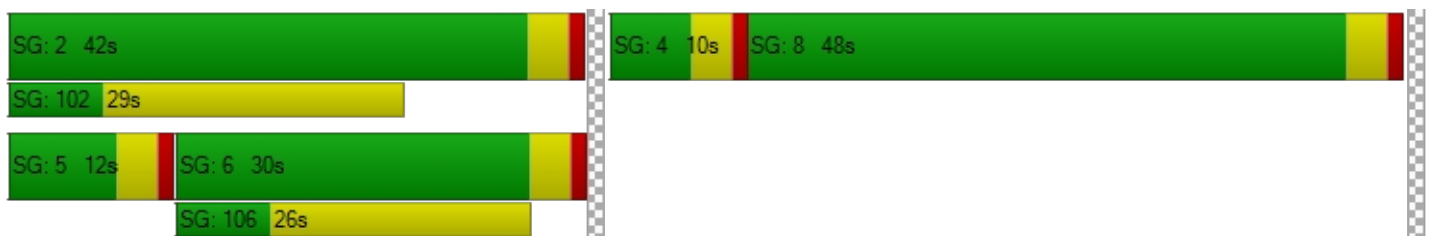
|                                 |       |       |       |       |      |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 30.68 | 34.35 | 32.92 | 0.00  | 0.00 | 47.02 | 55.57 | 20.29 | 0.00 | 0.00  | 30.15 | 32.70 |
| Movement LOS                    | C     | C     | C     |       |      | D     | E     | C     |      |       | C     | C     |
| d_A, Approach Delay [s/veh]     | 31.76 |       |       | 47.02 |      |       | 22.79 |       |      | 30.18 |       |       |
| Approach LOS                    | C     |       |       | D     |      |       | C     |       |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 28.74 |       |       |       |      |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |      |       |       |       |      |       |       |       |
| Intersection V/C                | 0.694 |       |       |       |      |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 39.64 | 39.64 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.722 | 2.020 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 879   | 120   | 759   | 520   |
| d_b, Bicycle Delay [s]                                   | 15.71 | 44.22 | 19.25 | 27.41 |
| I_b,int, Bicycle LOS Score for Intersection              | 5.092 | 1.560 | 2.476 | 2.281 |
| Bicycle LOS  | F     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 32.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.837 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | TUT                |        |        | TUT                |        |        | TUT              |        |        | TUT              |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                 |        |        | No                 |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                    |        |        |                    |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 172                | 236    | 93     | 190                | 370    | 186    | 238              | 2185   | 117    | 103              | 1795   | 112    |
| Base Volume Adjustment Factor               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 172                | 236    | 93     | 190                | 370    | 186    | 238              | 2185   | 117    | 103              | 1795   | 112    |
| Peak Hour Factor                            | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 43                 | 59     | 23     | 48                 | 93     | 47     | 60               | 546    | 29     | 26               | 449    | 28     |
| Total Analysis Volume [veh/h]               | 172                | 236    | 93     | 190                | 370    | 186    | 238              | 2185   | 117    | 103              | 1795   | 112    |
| Presence of On-Street Parking               | No                 |        | No     | No                 |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |                    | 0      |        |                    | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |                    | 0      |        |                    | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |                    | 0      |        |                    | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |                    | 0      |        |                    | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |                    | 0      |        |                    | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |                    | 0      |        |                    | 0      |        |                  | 0      |        |                  | 0      |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 13       | 42      | 0       | 20       | 47      | 0       | 11       | 38      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 29      | 0       | 0        | 26      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 22    | 22    | 8     | 24    | 24    | 16    | 57    | 57    | 7     | 48    | 48    |
| g / C, Green / Cycle                    | 0.05  | 0.20  | 0.20  | 0.07  | 0.22  | 0.22  | 0.15  | 0.52  | 0.52  | 0.06  | 0.44  | 0.44  |
| (v / s)_i Volume / Saturation Flow Rate | 0.05  | 0.09  | 0.08  | 0.05  | 0.19  | 0.10  | 0.13  | 0.40  | 0.41  | 0.06  | 0.25  | 0.26  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  | 1800  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 194   | 383   | 383   | 254   | 416   | 416   | 262   | 1961  | 980   | 116   | 2477  | 826   |
| d1, Uniform Delay [s]                   | 51.66 | 38.54 | 38.26 | 50.07 | 41.70 | 37.22 | 46.29 | 21.45 | 22.01 | 51.11 | 23.38 | 23.85 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.14  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 12.70 | 0.81  | 0.71  | 4.39  | 8.24  | 0.75  | 11.34 | 3.03  | 6.92  | 19.32 | 0.95  | 3.25  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.89   | 0.45   | 0.41   | 0.75   | 0.89   | 0.45   | 0.91   | 0.77   | 0.80   | 0.89   | 0.57   | 0.60   |
| d, Delay for Lane Group [s/veh]       | 64.37  | 39.35  | 38.97  | 54.46  | 49.95  | 37.98  | 57.63  | 24.49  | 28.93  | 70.44  | 24.34  | 27.10  |
| Lane Group LOS                        | E      | D      | D      | D      | D      | D      | E      | C      | C      | E      | C      | C      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.69   | 4.13   | 3.79   | 2.71   | 10.60  | 4.42   | 7.20   | 15.81  | 17.84  | 3.43   | 9.19   | 10.44  |
| 50th-Percentile Queue Length [ft/ln]  | 67.35  | 103.13 | 94.77  | 67.85  | 265.02 | 110.41 | 179.98 | 395.13 | 445.90 | 85.83  | 229.84 | 261.02 |
| 95th-Percentile Queue Length [veh/ln] | 4.85   | 7.43   | 6.82   | 4.89   | 15.94  | 7.86   | 11.60  | 22.32  | 24.76  | 6.18   | 14.17  | 15.74  |
| 95th-Percentile Queue Length [ft/ln]  | 121.22 | 185.63 | 170.58 | 122.14 | 398.51 | 196.57 | 289.99 | 558.12 | 619.06 | 154.49 | 354.15 | 393.49 |

**Movement, Approach, & Intersection Results**

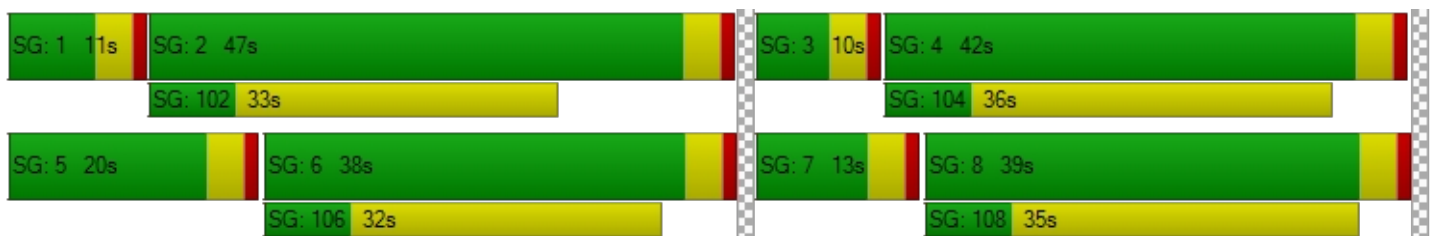
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 64.37 | 39.25 | 38.97 | 54.46 | 49.95 | 37.98 | 57.63 | 25.85 | 28.93 | 70.44 | 24.93 | 27.10 |
| Movement LOS                    | E     | D     | D     | D     | D     | D     | E     | C     | C     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 47.82 |       |       | 48.11 |       |       | 28.97 |       |       | 27.38 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 32.51 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.837 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.58 | 44.58 | 44.58 | 44.58 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.522 | 2.679 | 3.307 | 3.281 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 636   | 691   | 781   | 618   |
| d_b, Bicycle Delay [s]                                   | 25.59 | 23.59 | 20.43 | 26.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.973 | 2.791 | 2.957 | 2.389 |
| Bicycle LOS  | A     | C     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 18.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.735 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No               |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name  | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2159   | 488    | 201              | 1729   | 37     |
| Base Volume Input [veh/h]                   | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2159   | 488    | 201              | 1729   | 37     |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2159   | 488    | 201              | 1729   | 37     |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 51               | 4      | 42     | 7               | 8      | 4      | 4                | 540    | 122    | 50               | 432    | 9      |
| Total Analysis Volume [veh/h]               | 203              | 14     | 167    | 28              | 33     | 16     | 14               | 2159   | 488    | 201              | 1729   | 37     |
| Presence of On-Street Parking               | No               |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 26    | 0     | 0     | 10    | 0     | 10       | 32      | 0       | 22       | 44      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0        | 21      | 0       | 0        | 14      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | R     | L     | C    | C    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 11    | 11    | 11    | 5     | 5     | 2     | 46    | 46    | 12    | 57   | 57   |
| g / C, Green / Cycle                    | 0.12  | 0.12  | 0.12  | 0.06  | 0.06  | 0.02  | 0.51  | 0.51  | 0.13  | 0.63 | 0.63 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06  | 0.06  | 0.09  | 0.02  | 0.03  | 0.01  | 0.38  | 0.26  | 0.11  | 0.31 | 0.32 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 1800  | 1900  | 1800  | 5700  | 1900  | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 211   | 211   | 222   | 105   | 110   | 38    | 2926  | 975   | 241   | 2380 | 1190 |
| d1, Uniform Delay [s]                   | 37.40 | 37.42 | 38.54 | 40.63 | 41.06 | 43.55 | 17.19 | 14.37 | 38.05 | 9.07 | 9.23 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.93  | 1.96  | 5.05  | 1.35  | 2.77  | 5.86  | 1.71  | 1.83  | 7.30  | 0.72 | 1.55 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.51   | 0.52   | 0.75   | 0.27  | 0.44  | 0.37  | 0.74   | 0.50   | 0.83   | 0.49   | 0.51   |
| d, Delay for Lane Group [s/veh]       | 39.33  | 39.37  | 43.59  | 41.98 | 43.83 | 49.41 | 18.90  | 16.21  | 45.36  | 9.79   | 10.78  |
| Lane Group LOS                        | D      | D      | D      | D     | D     | D     | B      | B      | D      | A      | B      |
| Critical Lane Group                   | No     | No     | Yes    | No    | Yes   | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.33   | 2.34   | 3.83   | 0.63  | 1.13  | 0.37  | 11.19  | 6.58   | 4.74   | 5.62   | 6.21   |
| 50th-Percentile Queue Length [ft/ln]  | 58.13  | 58.51  | 95.78  | 15.70 | 28.16 | 9.18  | 279.82 | 164.48 | 118.58 | 140.45 | 155.32 |
| 95th-Percentile Queue Length [veh/ln] | 4.19   | 4.21   | 6.90   | 1.13  | 2.03  | 0.66  | 16.68  | 10.79  | 8.32   | 9.51   | 10.30  |
| 95th-Percentile Queue Length [ft/ln]  | 104.64 | 105.33 | 172.40 | 28.26 | 50.68 | 16.52 | 416.99 | 269.64 | 207.88 | 237.63 | 257.51 |

**Movement, Approach, & Intersection Results**

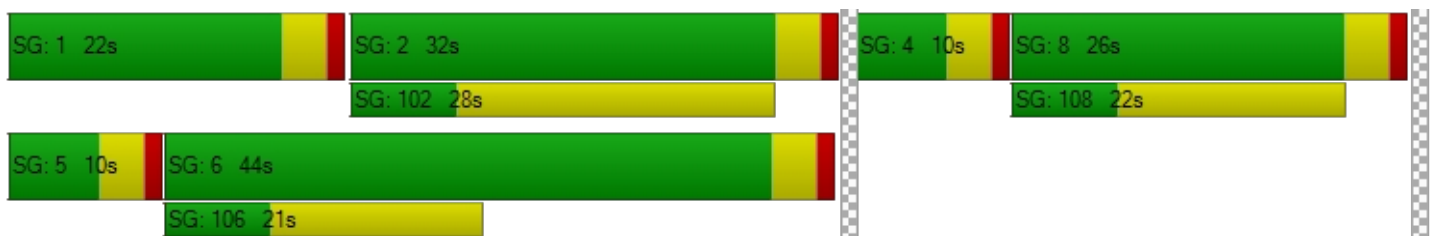
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 39.35 | 39.37 | 43.59 | 41.98 | 43.83 | 43.83 | 49.41 | 18.90 | 16.21 | 45.36 | 10.11 | 10.78 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | B     | B     | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 41.20 |       |       | 43.16 |       |       | 18.57 |       | 13.73 |       |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       | B     |       |       |       |
| d_I, Intersection Delay [s/veh] | 18.78 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | B     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.735 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.72 | 34.72 | 0.00  | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.400 | 1.986 | 0.000 | 3.195 |
| Crosswalk LOS  | B     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 488   | 133   | 622   | 888   |
| d_b, Bicycle Delay [s]                                   | 25.73 | 39.24 | 21.40 | 13.92 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.193 | 1.687 | 3.023 | 2.641 |
| Bicycle LOS  | B     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 29.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.697 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O T             |        |        | T O T             |        |        | T O T            |        |        | T O T            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                   |        |        |                   |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 202               | 269    | 99     | 413               | 724    | 148    | 155              | 1500   | 276    | 81               | 1241   | 101    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 202               | 269    | 99     | 413               | 724    | 148    | 155              | 1500   | 276    | 81               | 1241   | 101    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 51                | 67     | 25     | 103               | 181    | 37     | 39               | 375    | 69     | 20               | 310    | 25     |
| Total Analysis Volume [veh/h]               | 202               | 269    | 99     | 413               | 724    | 148    | 155              | 1500   | 276    | 81               | 1241   | 101    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 11       | 30      | 0       | 21       | 40      | 0       | 10       | 39      | 0       | 10       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 19      | 0       | 0        | 19      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 7     | 15    | 15    | 14    | 22    | 22    | 6     | 49    | 49    | 5     | 49    | 49    |
| g / C, Green / Cycle                    | 0.07  | 0.15  | 0.15  | 0.14  | 0.22  | 0.22  | 0.06  | 0.49  | 0.49  | 0.05  | 0.48  | 0.48  |
| (v / s)_i Volume / Saturation Flow Rate | 0.06  | 0.10  | 0.09  | 0.12  | 0.19  | 0.08  | 0.04  | 0.31  | 0.31  | 0.02  | 0.23  | 0.24  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 248   | 294   | 294   | 492   | 854   | 427   | 213   | 1862  | 931   | 191   | 1839  | 919   |
| d1, Uniform Delay [s]                   | 45.88 | 39.76 | 39.43 | 41.93 | 37.18 | 32.64 | 46.21 | 18.98 | 18.78 | 45.80 | 17.43 | 17.48 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 6.43  | 2.42  | 1.97  | 3.92  | 2.45  | 0.48  | 4.70  | 1.71  | 3.18  | 1.48  | 0.92  | 1.87  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.82   | 0.65   | 0.60   | 0.84   | 0.85   | 0.35   | 0.73  | 0.64   | 0.63   | 0.42  | 0.48   | 0.49   |
| d, Delay for Lane Group [s/veh]       | 52.31  | 42.18  | 41.40  | 45.85  | 39.64  | 33.12  | 50.91 | 20.68  | 21.96  | 47.28 | 18.34  | 19.35  |
| Lane Group LOS                        | D      | D      | D      | D      | D      | C      | D     | C      | C      | D     | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No    | Yes    | No     | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 2.68   | 4.58   | 4.18   | 5.19   | 8.64   | 3.05   | 2.02  | 10.23  | 10.29  | 1.01  | 6.89   | 7.23   |
| 50th-Percentile Queue Length [ft/ln]  | 67.04  | 114.53 | 104.47 | 129.71 | 216.08 | 76.37  | 50.58 | 255.78 | 257.28 | 25.25 | 172.33 | 180.66 |
| 95th-Percentile Queue Length [veh/ln] | 4.83   | 8.09   | 7.52   | 8.92   | 13.46  | 5.50   | 3.64  | 15.48  | 15.55  | 1.82  | 11.20  | 11.64  |
| 95th-Percentile Queue Length [ft/ln]  | 120.68 | 202.29 | 188.04 | 223.10 | 336.62 | 137.47 | 91.04 | 386.93 | 388.81 | 45.44 | 279.98 | 290.88 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.31 | 41.95 | 41.40 | 45.85 | 39.64 | 33.12 | 50.91 | 20.95 | 21.96 | 47.28 | 18.63 | 19.35 |
| Movement LOS                    | D     | D     | D     | D     | D     | C     | D     | C     | C     | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 45.52 |       |       | 40.88 |       |       | 23.50 |       |       | 20.31 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 29.32 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.697 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 39.64 | 39.64 | 39.64 | 39.64 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.726 | 2.851 | 3.160 | 3.149 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 520   | 719   | 700   | 700   |
| d_b, Bicycle Delay [s]                                   | 27.41 | 20.51 | 21.16 | 21.16 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.030 | 2.620 | 2.622 | 2.342 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 27.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.607 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Symbol]        |        |        | [Symbol]        |        |        | [Symbol]         |        |        | [Symbol]         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   | 151             | 203    | 135    | 306             | 305    | 200    | 199              | 1142   | 99     | 133              | 1771   | 164    |
| Base Volume Input [veh/h]                   | 151             | 203    | 135    | 306             | 305    | 200    | 199              | 1142   | 99     | 133              | 1771   | 164    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 151             | 203    | 135    | 306             | 305    | 200    | 199              | 1142   | 99     | 133              | 1771   | 164    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 38              | 51     | 34     | 77              | 76     | 50     | 50               | 286    | 25     | 33               | 443    | 41     |
| Total Analysis Volume [veh/h]               | 151             | 203    | 135    | 306             | 305    | 200    | 199              | 1142   | 99     | 133              | 1771   | 164    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 11       | 46      | 0       | 22       | 57      | 0       | 13       | 41      | 0       | 11       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 35      | 0       | 0        | 37      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 7     | 11    | 11    | 13    | 17    | 17    | 9     | 74    | 74   | 6     | 71    | 71    |
| g / C, Green / Cycle                    | 0.06  | 0.09  | 0.09  | 0.11  | 0.14  | 0.14  | 0.07  | 0.61  | 0.61 | 0.05  | 0.59  | 0.59  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.05  | 0.07  | 0.09  | 0.08  | 0.11  | 0.06  | 0.20  | 0.05 | 0.04  | 0.31  | 0.09  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 5700  | 1900 | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 207   | 353   | 177   | 373   | 534   | 267   | 256   | 3494  | 1165 | 190   | 3386  | 1129  |
| d1, Uniform Delay [s]                   | 55.55 | 52.18 | 53.17 | 52.51 | 48.23 | 49.58 | 54.67 | 11.24 | 9.48 | 55.82 | 14.35 | 10.83 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.91  | 1.48  | 6.73  | 4.52  | 0.97  | 4.21  | 5.02  | 0.25  | 0.14 | 4.64  | 0.58  | 0.27  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |       |       |        |       |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|--------|-------|
| X, volume / capacity                  | 0.73   | 0.57   | 0.76   | 0.82   | 0.57   | 0.75   | 0.78   | 0.33   | 0.08  | 0.70  | 0.52   | 0.15  |
| d, Delay for Lane Group [s/veh]       | 60.46  | 53.66  | 59.90  | 57.03  | 49.20  | 53.79  | 59.70  | 11.49  | 9.63  | 60.46 | 14.93  | 11.10 |
| Lane Group LOS                        | E      | D      | E      | E      | D      | D      | E      | B      | A     | E     | B      | B     |
| Critical Lane Group                   | No     | No     | Yes    | Yes    | No     | No     | Yes    | No     | No    | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 2.39   | 3.01   | 4.31   | 4.75   | 4.35   | 6.07   | 3.14   | 4.84   | 1.09  | 2.10  | 9.28   | 1.99  |
| 50th-Percentile Queue Length [ft/ln]  | 59.74  | 75.18  | 107.68 | 118.66 | 108.66 | 151.87 | 78.39  | 120.92 | 27.25 | 52.59 | 232.05 | 49.80 |
| 95th-Percentile Queue Length [veh/ln] | 4.30   | 5.41   | 7.71   | 8.32   | 7.77   | 10.12  | 5.64   | 8.44   | 1.96  | 3.79  | 14.28  | 3.59  |
| 95th-Percentile Queue Length [ft/ln]  | 107.54 | 135.32 | 192.78 | 207.99 | 194.14 | 252.92 | 141.10 | 211.09 | 49.04 | 94.66 | 356.96 | 89.64 |

**Movement, Approach, & Intersection Results**

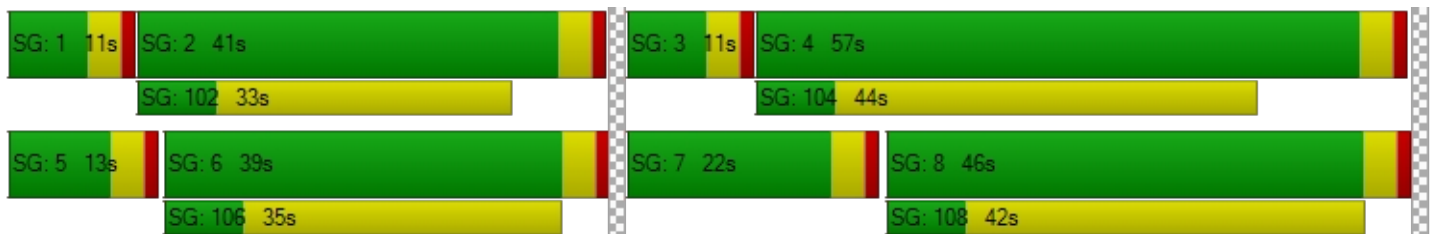
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 60.46 | 53.66 | 59.90 | 57.03 | 49.20 | 53.79 | 59.70 | 11.49 | 9.63 | 60.46 | 14.93 | 11.10 |
| Movement LOS                    | E     | D     | E     | E     | D     | D     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 57.48 |       |       | 53.29 |       |       | 18.02 |       |      | 17.56 |       |       |
| Approach LOS                    | E     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 27.78 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.607 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.751 |  |  | 2.799 |  |  | 3.249 |  |  | 3.259 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 700   |  |  | 883   |  |  | 617   |  |  | 583   |  |  |
| d_b, Bicycle Delay [s]                                   | 25.36 |  |  | 18.72 |  |  | 28.72 |  |  | 30.12 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.963 |  |  | 2.229 |  |  | 2.352 |  |  | 2.697 |  |  |
| Bicycle LOS  | A     |  |  | B     |  |  | B     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 242.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.845 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |            |        |        |            |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 280        | 216    | 160    | 940        | 531    | 24     | 40               | 1391   | 277    | 294              | 1639   | 607    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 280        | 216    | 160    | 940        | 531    | 24     | 40               | 1391   | 277    | 294              | 1639   | 607    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 70         | 54     | 40     | 235        | 133    | 6      | 10               | 348    | 69     | 74               | 410    | 152    |
| Total Analysis Volume [veh/h]               | 280        | 216    | 160    | 940        | 531    | 24     | 40               | 1391   | 277    | 294              | 1639   | 607    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 15       | 53      | 0       | 12       | 50      | 0       | 10       | 45      | 0       | 10       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 42      | 0       | 0        | 36      | 0       | 0        | 34      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L       | C     | R     | L     | C     | C     | L      | C     | R     |
|---|-------|-------|-------|---------|-------|-------|-------|-------|-------|--------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120     | 120   | 120   | 120   | 120   | 120   | 120    | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00    | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00    | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 11    | 23    | 23    | 8       | 20    | 20    | 4     | 67    | 67    | 6      | 69    | 69    |
| g / C, Green / Cycle                    | 0.09  | 0.19  | 0.19  | 0.07    | 0.16  | 0.16  | 0.04  | 0.56  | 0.56  | 0.05   | 0.57  | 0.57  |
| (v / s)_i Volume / Saturation Flow Rate | 0.08  | 0.06  | 0.08  | 0.27    | 0.14  | 0.01  | 0.02  | 0.30  | 0.29  | 0.08   | 0.29  | 0.32  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500    | 3800  | 1900  | 1800  | 3800  | 1900  | 3500   | 5700  | 1900  |
| c, Capacity [veh/h]                     | 323   | 716   | 358   | 236     | 621   | 311   | 68    | 2129  | 1064  | 178    | 3268  | 1089  |
| d1, Uniform Delay [s]                   | 53.77 | 41.93 | 43.18 | 55.99   | 48.83 | 42.54 | 56.85 | 16.49 | 16.26 | 56.98  | 15.34 | 16.06 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11   | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 7.04  | 0.23  | 0.88  | 1346.78 | 3.49  | 0.10  | 7.89  | 0.94  | 1.75  | 300.19 | 0.55  | 2.06  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.87   | 0.30   | 0.45   | 3.99    | 0.85   | 0.08  | 0.59  | 0.53   | 0.51   | 1.66   | 0.50   | 0.56   |
| d, Delay for Lane Group [s/veh]       | 60.81  | 42.16  | 44.05  | 1402.77 | 52.32  | 42.65 | 64.75 | 17.43  | 18.01  | 357.17 | 15.90  | 18.12  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D     | E     | B      | B      | F      | B      | B      |
| Critical Lane Group                   | No     | No     | Yes    | Yes     | No     | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.48   | 2.79   | 4.31   | 47.66   | 8.02   | 0.62  | 1.34  | 9.67   | 9.46   | 10.10  | 8.84   | 10.72  |
| 50th-Percentile Queue Length [ft/ln]  | 112.10 | 69.80  | 107.79 | 1191.46 | 200.51 | 15.42 | 33.60 | 241.67 | 236.45 | 252.48 | 221.10 | 267.89 |
| 95th-Percentile Queue Length [veh/ln] | 7.96   | 5.03   | 7.72   | 72.14   | 12.67  | 1.11  | 2.42  | 14.77  | 14.50  | 17.17  | 13.72  | 16.08  |
| 95th-Percentile Queue Length [ft/ln]  | 198.93 | 125.64 | 192.92 | 1803.58 | 316.63 | 27.76 | 60.48 | 369.14 | 362.55 | 429.24 | 343.03 | 402.10 |

**Movement, Approach, & Intersection Results**

|                                 |        |       |       |         |       |       |       |       |       |        |       |       |
|---------------------------------|--------|-------|-------|---------|-------|-------|-------|-------|-------|--------|-------|-------|
| d_M, Delay for Movement [s/veh] | 60.81  | 42.16 | 44.05 | 1402.77 | 52.32 | 42.65 | 64.75 | 17.54 | 18.01 | 357.17 | 15.90 | 18.12 |
| Movement LOS                    | E      | D     | D     | F       | D     | D     | E     | B     | B     | F      | B     | B     |
| d_A, Approach Delay [s/veh]     | 50.58  |       |       | 901.28  |       |       | 18.72 |       |       | 55.93  |       |       |
| Approach LOS                    | D      |       |       | F       |       |       | B     |       |       | E      |       |       |
| d_I, Intersection Delay [s/veh] | 242.95 |       |       |         |       |       |       |       |       |        |       |       |
| Intersection LOS                | F      |       |       |         |       |       |       |       |       |        |       |       |
| Intersection V/C                | 0.845  |       |       |         |       |       |       |       |       |        |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.853 |  |  | 2.936 |  |  | 3.116 |  |  | 3.408 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 816   |  |  | 766   |  |  | 683   |  |  | 683   |  |  |
| d_b, Bicycle Delay [s]                                   | 21.02 |  |  | 22.83 |  |  | 26.02 |  |  | 26.02 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.101 |  |  | 2.793 |  |  | 2.499 |  |  | 2.957 |  |  |
| Bicycle LOS  | B     |  |  | C     |  |  | B     |  |  | C     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 42.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.877 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |



**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                         |        |        |                         |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 368                     | 688    | 353    | 637                     | 461    | 17     | 44           | 1644   | 302    | 457          | 1330   | 801    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 368                     | 688    | 353    | 637                     | 461    | 17     | 44           | 1644   | 302    | 457          | 1330   | 801    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 92                      | 172    | 88     | 159                     | 115    | 4      | 11           | 411    | 76     | 114          | 333    | 200    |
| Total Analysis Volume [veh/h]               | 368                     | 688    | 353    | 637                     | 461    | 17     | 44           | 1644   | 302    | 457          | 1330   | 801    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |
| Bicycle Volume [bicycles/h]                 |                         | 0      |        |                         | 0      |        |              | 0      |        |              | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 17       | 34      | 0       | 27       | 44      | 0       | 10       | 39      | 0       | 20       | 49      | 49      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 0       | 0       | 0        | 33      | 0       | 0        | 28      | 0       | 0        | 22      | 22      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  |
| g_i, Effective Green Time [s]           | 13    | 26    | 26    | 26    | 23    | 36    | 36    | 5     | 39    | 39    | 16    | 50    | 77    |
| g / C, Green / Cycle                    | 0.11  | 0.22  | 0.22  | 0.22  | 0.19  | 0.30  | 0.30  | 0.04  | 0.33  | 0.33  | 0.13  | 0.42  | 0.65  |
| (v / s)_i Volume / Saturation Flow Rate | 0.11  | 0.19  | 0.19  | 0.17  | 0.18  | 0.13  | 0.13  | 0.01  | 0.26  | 0.25  | 0.13  | 0.23  | 0.42  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 5700  | 1900  | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 381   | 410   | 410   | 410   | 671   | 568   | 568   | 138   | 1854  | 618   | 468   | 2392  | 1225  |
| d1, Uniform Delay [s]                   | 53.28 | 45.63 | 45.49 | 44.33 | 47.94 | 33.78 | 33.72 | 56.11 | 36.77 | 36.67 | 51.82 | 26.38 | 13.10 |
| k, delay calibration                    | 0.11  | 0.28  | 0.27  | 0.21  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 14.78 | 14.76 | 13.38 | 6.02  | 7.99  | 0.50  | 0.49  | 1.32  | 3.50  | 9.55  | 14.53 | 0.94  | 2.73  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |       |        |        |        |       |        |        |        |        |        |
|---------------------------------------|-------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.97  | 0.89  | 0.87  | 0.78  | 0.95   | 0.42   | 0.42   | 0.32  | 0.79   | 0.78   | 0.98   | 0.56   | 0.65   |
| d, Delay for Lane Group [s/veh]       | 68.06 | 60.39 | 58.87 | 50.35 | 55.93  | 34.28  | 34.21  | 57.43 | 40.27  | 46.22  | 66.35  | 27.31  | 15.83  |
| Lane Group LOS                        | E     | E     | E     | D     | E      | C      | C      | E     | D      | D      | E      | C      | B      |
| Critical Lane Group                   | No    | Yes   | No    | No    | Yes    | No     | No     | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 6.30  | 12.14 | 11.81 | 9.59  | 10.11  | 5.72   | 5.64   | 0.67  | 13.46  | 14.36  | 7.78   | 9.72   | 13.32  |
| 50th-Percentile Queue Length [ft/ln]  | 157.5 | 303.5 | 295.2 | 239.7 | 252.87 | 142.98 | 140.97 | 16.87 | 336.39 | 358.94 | 194.48 | 243.00 | 332.93 |
| 95th-Percentile Queue Length [veh/ln] | 10.42 | 17.85 | 17.45 | 14.67 | 15.33  | 9.64   | 9.53   | 1.21  | 19.47  | 20.57  | 12.35  | 14.83  | 19.30  |
| 95th-Percentile Queue Length [ft/ln]  | 260.4 | 446.3 | 436.1 | 366.7 | 383.27 | 241.03 | 238.33 | 30.37 | 486.78 | 514.29 | 308.84 | 370.83 | 482.55 |

**Movement, Approach, & Intersection Results**

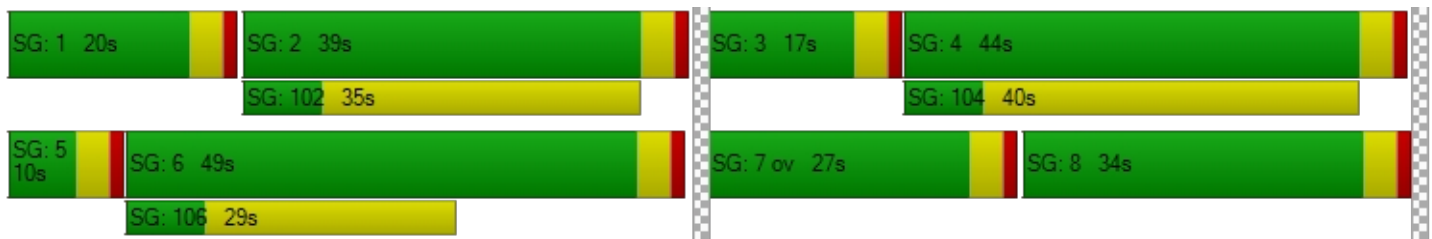
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 68.06 | 59.67 | 50.52 | 55.93 | 34.25 | 34.21 | 57.43 | 40.92 | 46.22 | 66.35 | 27.31 | 15.83 |
| Movement LOS                    | E     | E     | D     | E     | C     | C     | E     | D     | D     | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 59.74 |       |       | 46.63 |       |       | 42.09 |       |       | 30.65 |       |       |
| Approach LOS                    | E     |       |       | D     |       |       | D     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 42.14 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.877 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.974 | 2.897 | 3.264 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 500   | 666   | 583   | 750   |
| d_b, Bicycle Delay [s]                                   | 33.76 | 26.68 | 30.12 | 23.45 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.722 | 2.479 | 2.380 | 2.983 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**




|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 19.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.653 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps  |        |        | Lambert Road  |        |        | Lambert Road  |        |        |
|------------------------------|----------------|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound     |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |                |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1   | 0      | 1      | 0   | 0      | 1      | 1   | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 |                |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes            |        |        | Yes   |        |        | No  |        |        | No  |        |        |

**Volumes**

| Name  | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 0              | 0      | 0      | 477            | 0      | 897    | 0            | 1466   | 877    | 256          | 1807   | 0      |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0              | 0      | 0      | 477            | 0      | 897    | 0            | 1466   | 877    | 256          | 1807   | 0      |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0              | 0      | 0      | 119            | 0      | 224    | 0            | 367    | 219    | 64           | 452    | 0      |
| Total Analysis Volume [veh/h]               | 0              | 0      | 0      | 477            | 0      | 897    | 0            | 1466   | 877    | 256          | 1807   | 0      |
| Presence of On-Street Parking               |                |        |        | No             |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 44    | 0       | 0     | 0       | 33      | 0       | 13       | 46      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 12      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              |  | L     | R     | C     | R     | L     | C    |
|---|--|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     |  | 90    | 90    | 90    | 90    | 90    | 90   |
| L, Total Lost Time per Cycle [s]        |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 |
| g_i, Effective Green Time [s]           |  | 26    | 26    | 43    | 43    | 8     | 56   |
| g / C, Green / Cycle                    |  | 0.29  | 0.29  | 0.48  | 0.48  | 0.09  | 0.62 |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.14  | 0.24  | 0.26  | 0.23  | 0.07  | 0.32 |
| s, saturation flow rate [veh/h]         |  | 3500  | 3800  | 5700  | 3800  | 3500  | 5700 |
| c, Capacity [veh/h]                     |  | 1029  | 1117  | 2724  | 1816  | 332   | 3518 |
| d1, Uniform Delay [s]                   |  | 25.98 | 29.37 | 16.52 | 15.95 | 39.80 | 9.66 |
| k, delay calibration                    |  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 |
| l, Upstream Filtering Factor            |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               |  | 0.33  | 1.40  | 0.77  | 0.92  | 3.82  | 0.54 |
| d3, Initial Queue Delay [s]             |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |  |        |        |        |        |        |        |
|---------------------------------------|--|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  |  | 0.46   | 0.80   | 0.54   | 0.48   | 0.77   | 0.51   |
| d, Delay for Lane Group [s/veh]       |  | 26.31  | 30.77  | 17.29  | 16.88  | 43.62  | 10.20  |
| Lane Group LOS                        |  | C      | C      | B      | B      | D      | B      |
| Critical Lane Group                   |  | No     | Yes    | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] |  | 4.13   | 8.89   | 6.88   | 6.02   | 2.91   | 6.07   |
| 50th-Percentile Queue Length [ft/ln]  |  | 103.15 | 222.24 | 171.92 | 150.60 | 72.63  | 151.83 |
| 95th-Percentile Queue Length [veh/ln] |  | 7.43   | 13.78  | 11.18  | 10.05  | 5.23   | 10.11  |
| 95th-Percentile Queue Length [ft/ln]  |  | 185.67 | 344.48 | 279.44 | 251.23 | 130.73 | 252.87 |



**Movement, Approach, & Intersection Results**

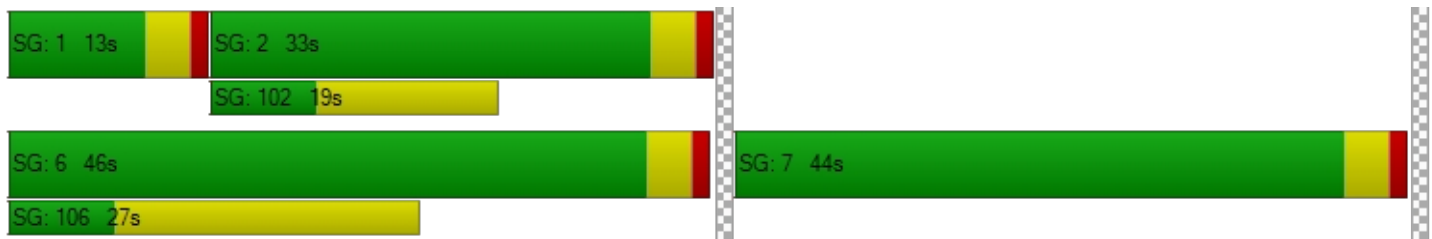
|                                 |       |      |      |       |      |       |       |       |       |       |       |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 26.31 | 0.00 | 30.77 | 0.00  | 17.29 | 16.88 | 43.62 | 10.20 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | B     | B     | D     | B     |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 29.22 |      |       | 17.13 |       |       | 14.35 |       |      |
| Approach LOS                    | A     |      |      | C     |      |       | B     |       |       | B     |       |      |
| d_I, Intersection Delay [s/veh] | 19.01 |      |      |       |      |       |       |       |       |       |       |      |
| Intersection LOS                | B     |      |      |       |      |       |       |       |       |       |       |      |
| Intersection V/C                | 0.653 |      |      |       |      |       |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.267 | 2.466 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 889   | 644   | 933   |
| d_b, Bicycle Delay [s]                                   | 45.01 | 13.90 | 20.68 | 12.81 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 1.560 | 2.848 | 2.694 |
| Bicycle LOS  | D     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 13.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.542 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐            |        |        |                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No             |        |        |                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 710            | 0      | 302    | 0              | 0      | 0      | 0            | 1604   | 605    | 0            | 1166   | 526    |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 710            | 0      | 302    | 0              | 0      | 0      | 0            | 1604   | 605    | 0            | 1166   | 526    |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]              | 178            | 0      | 76     | 0              | 0      | 0      | 0            | 401    | 151    | 0            | 292    | 0      |
| Total Analysis Volume [veh/h]               | 710            | 0      | 302    | 0              | 0      | 0      | 0            | 1604   | 605    | 0            | 1166   | 0      |
| Presence of On-Street Parking               | No             |        | No     |                |        |        | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |                | 0      |        |                | 0      |        |              | 0      |        |              | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |                | 0      |        |                | 0      |        |              | 0      |        |              | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |                | 0      |        |                | 0      |        |              | 0      |        |              | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |                | 0      |        |                | 0      |        |              | 0      |        |              | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |                | 0      |        |                | 0      |        |              | 0      |        |              | 0      |        |
| Bicycle Volume [bicycles/h]                 |                | 0      |        |                | 0      |        |              | 0      |        |              | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Split | Permiss | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Unsigna |
|------------------------------|-------|---------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 3     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |         |       |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag                   | Lead  | -       | -     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 6     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 30    | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 54    | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 36      | 0       | 0       | 36      | 0       |
| Vehicle Extension [s]        | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 7       | 0       | 0       | 0       | 0       |
| Pedestrian Clearance [s]     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 25      | 0       | 0       | 0       | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Maximum Recall               | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Pedestrian Recall            | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | R     |  | C    | C    | R    | C    |
|---|-------|-------|--|------|------|------|------|
| C, Cycle Length [s]                     | 90    | 90    |  | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 22    | 22    |  | 60   | 60   | 60   | 60   |
| g / C, Green / Cycle                    | 0.25  | 0.25  |  | 0.66 | 0.66 | 0.66 | 0.66 |
| (v / s)_i Volume / Saturation Flow Rate | 0.20  | 0.16  |  | 0.29 | 0.29 | 0.29 | 0.20 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 3800 | 1900 | 1900 | 5700 |
| c, Capacity [veh/h]                     | 869   | 472   |  | 2518 | 1259 | 1259 | 3778 |
| d1, Uniform Delay [s]                   | 31.84 | 30.18 |  | 7.20 | 7.20 | 7.20 | 6.42 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.50 | 0.50 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.96  | 1.46  |  | 0.56 | 1.11 | 1.11 | 0.21 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |  |        |        |        |        |
|---------------------------------------|--------|--------|--|--------|--------|--------|--------|
| X, volume / capacity                  | 0.82   | 0.64   |  | 0.44   | 0.44   | 0.44   | 0.31   |
| d, Delay for Lane Group [s/veh]       | 33.80  | 31.64  |  | 7.76   | 8.31   | 8.31   | 6.64   |
| Lane Group LOS                        | C      | C      |  | A      | A      | A      | A      |
| Critical Lane Group                   | Yes    | No     |  | Yes    | No     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 7.31   | 5.89   |  | 4.52   | 4.71   | 4.71   | 2.79   |
| 50th-Percentile Queue Length [ft/ln]  | 182.70 | 147.32 |  | 112.89 | 117.74 | 117.74 | 69.65  |
| 95th-Percentile Queue Length [veh/ln] | 11.74  | 9.87   |  | 8.00   | 8.27   | 8.27   | 5.02   |
| 95th-Percentile Queue Length [ft/ln]  | 293.54 | 246.85 |  | 200.02 | 206.72 | 206.72 | 125.38 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 33.80 | 0.00 | 31.64 | 0.00 | 0.00 | 0.00 | 0.00 | 7.80 | 8.31 | 0.00 | 6.64 | 0.00 |
| Movement LOS                    | C     |      | C     |      |      |      |      | A    | A    |      | A    |      |
| d_A, Approach Delay [s/veh]     | 33.16 |      |       | 0.00 |      |      | 8.04 |      |      | 6.64 |      |      |
| Approach LOS                    | C     |      |       | A    |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 13.46 |      |       |      |      |      |      |      |      |      |      |      |
| Intersection LOS                | B     |      |       |      |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.542 |      |       |      |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.63 | 0.00  | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.615 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | F     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1112  | 0     | 712   | 712   |
| d_b, Bicycle Delay [s]                                   | 8.86  | 44.96 | 18.65 | 18.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.560 | 4.132 | 2.775 | 2.201 |
| Bicycle LOS  | A     | D     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 15.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.598 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | +            |        |        | +            |        |        | +            |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No           |        |        | No           |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name  | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |              |        |        |              |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 130          | 0      | 32     | 126          | 0      | 469    | 214          | 2091   | 44     | 17           | 1653   | 63     |
| Base Volume Adjustment Factor               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 130          | 0      | 32     | 126          | 0      | 469    | 214          | 2091   | 44     | 17           | 1653   | 63     |
| Peak Hour Factor                            | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 33           | 0      | 8      | 32           | 0      | 117    | 54           | 523    | 11     | 4            | 413    | 16     |
| Total Analysis Volume [veh/h]               | 130          | 0      | 32     | 126          | 0      | 469    | 214          | 2091   | 44     | 17           | 1653   | 63     |
| Presence of On-Street Parking               | No           |        | No     | No           |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 45      | 0       | 0       | 45      | 0       | 11       | 35      | 0       | 10       | 34      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 33      | 0       | 0       | 0       | 0       | 0        | 14      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90   | 90   | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 14    | 14    | 14    | 7     | 62   | 62   | 2     | 57   | 57   |
| g / C, Green / Cycle                    | 0.16  | 0.16  | 0.16  | 0.08  | 0.69 | 0.69 | 0.02  | 0.63 | 0.63 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.07  | 0.12  | 0.06  | 0.37 | 0.39 | 0.01  | 0.30 | 0.31 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 3500  | 3800 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 356   | 364   | 600   | 276   | 2601 | 1300 | 44    | 2394 | 1197 |
| d1, Uniform Delay [s]                   | 35.08 | 34.33 | 36.42 | 40.70 | 7.11 | 7.29 | 43.27 | 8.78 | 8.90 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.91  | 0.56  | 2.26  | 4.69  | 0.81 | 1.77 | 5.51  | 0.67 | 1.42 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.45   | 0.35   | 0.78   | 0.78   | 0.54   | 0.56   | 0.39  | 0.47   | 0.49   |
| d, Delay for Lane Group [s/veh]       | 35.99  | 34.89  | 38.68  | 45.39  | 7.91   | 9.06   | 48.78 | 9.45   | 10.32  |
| Lane Group LOS                        | D      | C      | D      | D      | A      | A      | D     | A      | B      |
| Critical Lane Group                   | No     | No     | Yes    | No     | No     | Yes    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.33   | 2.52   | 5.05   | 2.48   | 5.84   | 6.58   | 0.44  | 5.34   | 5.83   |
| 50th-Percentile Queue Length [ft/ln]  | 83.15  | 63.00  | 126.29 | 61.94  | 145.93 | 164.39 | 10.91 | 133.59 | 145.64 |
| 95th-Percentile Queue Length [veh/ln] | 5.99   | 4.54   | 8.74   | 4.46   | 9.80   | 10.78  | 0.79  | 9.13   | 9.78   |
| 95th-Percentile Queue Length [ft/ln]  | 149.66 | 113.39 | 218.44 | 111.49 | 244.99 | 269.53 | 19.65 | 228.37 | 244.61 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |      |      |       |      |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|-------|
| d_M, Delay for Movement [s/veh] | 35.99 | 35.99 | 35.99 | 34.89 | 34.89 | 38.68 | 45.39 | 8.29 | 9.06 | 48.78 | 9.72 | 10.32 |
| Movement LOS                    | D     | D     | D     | C     | C     | D     | D     | A    | A    | D     | A    | B     |
| d_A, Approach Delay [s/veh]     | 35.99 |       |       | 37.88 |       |       | 11.69 |      |      | 10.13 |      |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |      |      | B     |      |       |
| d_I, Intersection Delay [s/veh] | 15.16 |       |       |       |       |       |       |      |      |       |      |       |
| Intersection LOS                | B     |       |       |       |       |       |       |      |      |       |      |       |
| Intersection V/C                | 0.598 |       |       |       |       |       |       |      |      |       |      |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 0.00  | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.823 | 2.469 | 0.000 | 3.327 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 911   | 911   | 689   | 666   |
| d_b, Bicycle Delay [s]                                   | 13.35 | 13.35 | 19.35 | 20.01 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.827 | 2.541 | 2.852 | 2.513 |
| Bicycle LOS  | A     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.644 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No          |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |             |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 154               | 62     | 23     | 92          | 118    | 151    | 49           | 1994   | 227    | 26           | 1454   | 48     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 154               | 62     | 23     | 92          | 118    | 151    | 49           | 1994   | 227    | 26           | 1454   | 48     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 39                | 16     | 6      | 23          | 30     | 38     | 12           | 499    | 57     | 7            | 364    | 12     |
| Total Analysis Volume [veh/h]               | 154               | 62     | 23     | 92          | 118    | 151    | 49           | 1994   | 227    | 26           | 1454   | 48     |
| Presence of On-Street Parking               | No                |        | No     | No          |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 19       | 27      | 0       | 22       | 30      | 0       | 10       | 31      | 0       | 10       | 31      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 16      | 0       | 0        | 19      | 0       | 0        | 20      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R    | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90   | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 10    | 13    | 13    | 6     | 10    | 10    | 4     | 52    | 52   | 3     | 51    | 51    |
| g / C, Green / Cycle                    | 0.11  | 0.15  | 0.15  | 0.07  | 0.11  | 0.11  | 0.05  | 0.58  | 0.58 | 0.03  | 0.56  | 0.56  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.02  | 0.02  | 0.05  | 0.06  | 0.08  | 0.01  | 0.35  | 0.12 | 0.01  | 0.26  | 0.27  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1900  | 1900  | 3500  | 5700  | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 192   | 277   | 277   | 122   | 204   | 204   | 169   | 3280  | 1093 | 60    | 2129  | 1065  |
| d1, Uniform Delay [s]                   | 39.36 | 33.65 | 33.62 | 41.30 | 38.31 | 39.04 | 41.41 | 12.50 | 9.23 | 42.76 | 11.79 | 11.93 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 7.63  | 0.26  | 0.25  | 9.06  | 2.59  | 5.22  | 0.93  | 0.85  | 0.43 | 4.88  | 0.73  | 1.55  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |       |        |        |        |       |        |       |       |        |        |
|---------------------------------------|--------|-------|-------|--------|--------|--------|-------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.80   | 0.16  | 0.15  | 0.75   | 0.58   | 0.74   | 0.29  | 0.61   | 0.21  | 0.43  | 0.47   | 0.48   |
| d, Delay for Lane Group [s/veh]       | 46.99  | 33.91 | 33.87 | 50.36  | 40.90  | 44.26  | 42.34 | 13.34  | 9.66  | 47.64 | 12.52  | 13.48  |
| Lane Group LOS                        | D      | C     | C     | D      | D      | D      | D     | B      | A     | D     | B      | B      |
| Critical Lane Group                   | Yes    | No    | No    | No     | No     | Yes    | No    | Yes    | No    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.69   | 0.84  | 0.81  | 2.29   | 2.60   | 3.49   | 0.54  | 8.13   | 2.12  | 0.64  | 5.63   | 6.12   |
| 50th-Percentile Queue Length [ft/ln]  | 92.22  | 21.03 | 20.16 | 57.27  | 64.90  | 87.24  | 13.56 | 203.14 | 52.88 | 16.10 | 140.64 | 152.88 |
| 95th-Percentile Queue Length [veh/ln] | 6.64   | 1.51  | 1.45  | 4.12   | 4.67   | 6.28   | 0.98  | 12.80  | 3.81  | 1.16  | 9.52   | 10.17  |
| 95th-Percentile Queue Length [ft/ln]  | 165.99 | 37.85 | 36.28 | 103.09 | 116.83 | 157.02 | 24.41 | 320.01 | 95.18 | 28.97 | 237.89 | 254.28 |

**Movement, Approach, & Intersection Results**

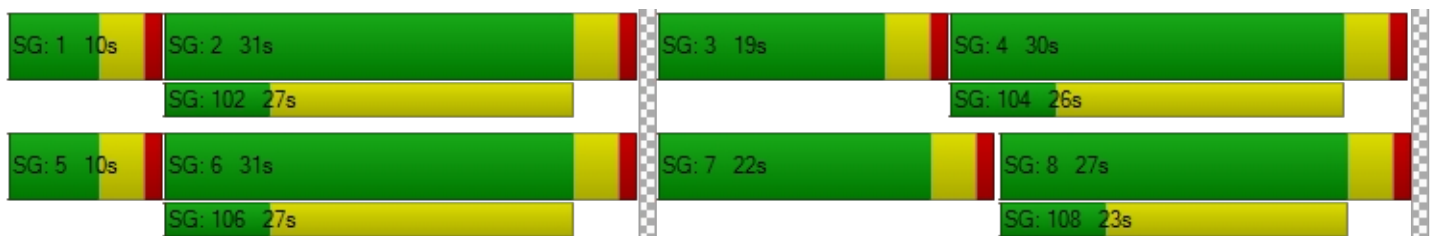
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 46.99 | 33.90 | 33.87 | 50.36 | 40.90 | 44.26 | 42.34 | 13.34 | 9.66 | 47.64 | 12.82 | 13.48 |
| Movement LOS                    | D     | C     | C     | D     | D     | D     | D     | B     | A    | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 42.33 |       |       | 44.72 |       |       | 13.60 |       |      | 13.44 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 17.66 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | B     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.644 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.72 | 34.72 | 34.72 | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.418 | 2.401 | 3.285 | 3.100 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 511   | 577   | 599   | 599   |
| d_b, Bicycle Delay [s]                                   | 24.98 | 22.80 | 22.09 | 22.09 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.757 | 1.857 | 2.808 | 2.400 |
| Bicycle LOS  | A     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 31.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.600 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No            |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 605               | 343    | 216    | 5             | 122    | 126    | 209          | 986    | 525    | 74           | 411    | 32     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 605               | 343    | 216    | 5             | 122    | 126    | 209          | 986    | 525    | 74           | 411    | 32     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 151               | 86     | 54     | 1             | 31     | 32     | 52           | 247    | 131    | 19           | 103    | 8      |
| Total Analysis Volume [veh/h]               | 605               | 343    | 216    | 5             | 122    | 126    | 209          | 986    | 525    | 74           | 411    | 32     |
| Presence of On-Street Parking               | No                |        | No     | No            |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 6        | 6       | 0       | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 30       | 30      | 0       | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 27       | 59      | 59      | 10       | 42      | 0       | 19       | 41      | 41      | 10       | 32      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0        | 7       | 0       | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 30      | 30      | 0        | 31      | 0       | 0        | 26      | 26      | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Maximum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 23    | 32    | 42    | 1     | 10    | 10    | 15    | 65    | 92   | 6     | 56    | 56    |
| g / C, Green / Cycle                    | 0.19  | 0.27  | 0.35  | 0.01  | 0.09  | 0.09  | 0.13  | 0.54  | 0.76 | 0.05  | 0.47  | 0.47  |
| (v / s)_i Volume / Saturation Flow Rate | 0.17  | 0.18  | 0.11  | 0.00  | 0.06  | 0.07  | 0.12  | 0.26  | 0.14 | 0.02  | 0.08  | 0.08  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 3800 | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 662   | 508   | 668   | 16    | 165   | 165   | 226   | 2052  | 2897 | 178   | 1768  | 884   |
| d1, Uniform Delay [s]                   | 47.72 | 39.32 | 28.49 | 59.16 | 53.49 | 53.61 | 51.95 | 17.16 | 3.93 | 55.26 | 18.60 | 18.64 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.46  | 1.57  | 0.28  | 11.41 | 6.33  | 7.12  | 14.87 | 0.81  | 0.14 | 1.55  | 0.20  | 0.42  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |        |        |        |        |       |       |        |        |
|---------------------------------------|--------|--------|--------|-------|--------|--------|--------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.91   | 0.68   | 0.32   | 0.32  | 0.74   | 0.76   | 0.93   | 0.48   | 0.18  | 0.42  | 0.17   | 0.17   |
| d, Delay for Lane Group [s/veh]       | 53.18  | 40.89  | 28.77  | 70.57 | 59.82  | 60.73  | 66.81  | 17.97  | 4.07  | 56.81 | 18.80  | 19.06  |
| Lane Group LOS                        | D      | D      | C      | E     | E      | E      | E      | B      | A     | E     | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No    | No     | Yes    | No     | Yes    | No    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 9.34   | 9.24   | 4.62   | 0.20  | 3.88   | 4.05   | 7.15   | 8.51   | 1.58  | 1.13  | 2.42   | 2.54   |
| 50th-Percentile Queue Length [ft/ln]  | 233.41 | 230.95 | 115.52 | 5.02  | 97.12  | 101.18 | 178.67 | 212.64 | 39.58 | 28.15 | 60.38  | 63.50  |
| 95th-Percentile Queue Length [veh/ln] | 14.35  | 14.22  | 8.15   | 0.36  | 6.99   | 7.28   | 11.53  | 13.29  | 2.85  | 2.03  | 4.35   | 4.57   |
| 95th-Percentile Queue Length [ft/ln]  | 358.69 | 355.56 | 203.66 | 9.03  | 174.81 | 182.12 | 288.28 | 332.22 | 71.25 | 50.68 | 108.69 | 114.30 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 53.18 | 40.89 | 28.77 | 70.57 | 59.82 | 60.73 | 66.81 | 17.97 | 4.07 | 56.81 | 18.87 | 19.06 |
| Movement LOS                    | D     | D     | C     | E     | E     | E     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 45.03 |       |       | 60.49 |       |       | 19.66 |       |      | 24.31 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | B     |       |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 31.23 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.600 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.773 | 2.349 | 3.088 | 2.848 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 916   | 633   | 617   | 467   |
| d_b, Bicycle Delay [s]                                   | 17.62 | 28.03 | 28.72 | 35.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.480 | 1.977 | 2.979 | 1.844 |
| Bicycle LOS  | C     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.444 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No               |        |        | No               |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 28               | 2      | 14     | 2                | 0      | 6      | 6            | 1407   | 23     | 6            | 705    | 3      |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 28               | 2      | 14     | 2                | 0      | 6      | 6            | 1407   | 23     | 6            | 705    | 3      |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 7                | 1      | 4      | 1                | 0      | 2      | 2            | 352    | 6      | 2            | 176    | 1      |
| Total Analysis Volume [veh/h]               | 28               | 2      | 14     | 2                | 0      | 6      | 6            | 1407   | 23     | 6            | 705    | 3      |
| Presence of On-Street Parking               | No               |        | No     | No               |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 6       | 0       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 30      | 0       | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 40      | 0       | 40      | 0       | 0       | 10       | 30      | 0       | 10       | 30      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 7       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 29      | 0       | 29      | 0       | 0       | 0        | 18      | 0       | 0        | 16      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         | No      |         |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 1     | 1     | 1     | 97   | 97   | 1     | 97   | 97   |
| g / C, Green / Cycle                    | 0.04  | 0.04  | 0.01  | 0.01  | 0.01  | 0.81 | 0.81 | 0.01  | 0.81 | 0.81 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02  | 0.01  | 0.00  | 0.00  | 0.00  | 0.38 | 0.38 | 0.00  | 0.12 | 0.13 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 70    | 74    | 22    | 23    | 17    | 1532 | 1532 | 17    | 3063 | 1532 |
| d1, Uniform Delay [s]                   | 56.31 | 55.91 | 58.63 | 58.75 | 59.07 | 3.62 | 3.61 | 59.07 | 2.57 | 2.59 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.65  | 1.45  | 1.77  | 5.77  | 11.67 | 1.03 | 1.02 | 11.67 | 0.11 | 0.22 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |       |       |       |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
| X, volume / capacity                  | 0.40  | 0.22  | 0.09  | 0.26  | 0.35  | 0.47   | 0.47   | 0.35  | 0.15  | 0.16  |
| d, Delay for Lane Group [s/veh]       | 59.96 | 57.36 | 60.40 | 64.52 | 70.74 | 4.65   | 4.64   | 70.74 | 2.68  | 2.81  |
| Lane Group LOS                        | E     | E     | E     | E     | E     | A      | A      | E     | A     | A     |
| Critical Lane Group                   | Yes   | No    | No    | Yes   | No    | Yes    | No     | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.90  | 0.50  | 0.07  | 0.22  | 0.24  | 4.53   | 4.50   | 0.24  | 0.99  | 1.09  |
| 50th-Percentile Queue Length [ft/ln]  | 22.51 | 12.51 | 1.77  | 5.45  | 5.93  | 113.29 | 112.48 | 5.93  | 24.65 | 27.21 |
| 95th-Percentile Queue Length [veh/ln] | 1.62  | 0.90  | 0.13  | 0.39  | 0.43  | 8.02   | 7.98   | 0.43  | 1.78  | 1.96  |
| 95th-Percentile Queue Length [ft/ln]  | 40.52 | 22.51 | 3.19  | 9.81  | 10.67 | 200.57 | 199.45 | 10.67 | 44.38 | 48.99 |

**Movement, Approach, & Intersection Results**

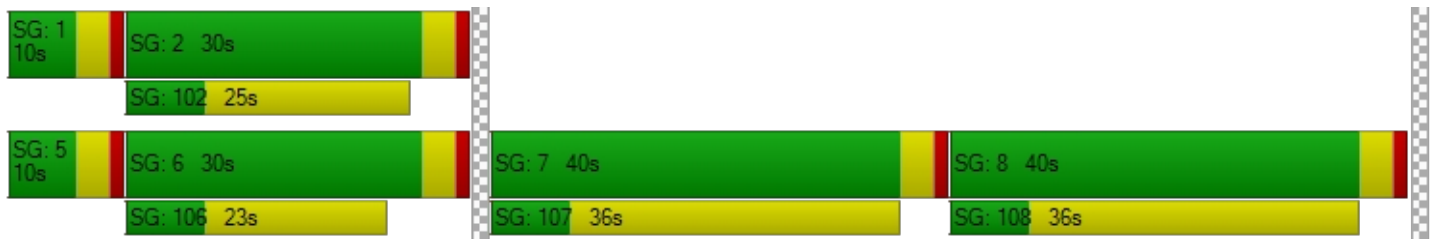
|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 59.96 | 57.36 | 57.36 | 60.40 | 0.00 | 64.52 | 70.74 | 4.64 | 4.64 | 70.74 | 2.72 | 2.81 |
| Movement LOS                    | E     | E     | E     | E     |      | E     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 59.02 |       |       | 63.49 |      |       | 4.92  |      | 3.29 |       |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      | A    |       |      |      |
| d_I, Intersection Delay [s/veh] | 5.69  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.444 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.978 | 1.960 | 2.820 | 2.814 |
| Crosswalk LOS  | A     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 600   | 600   | 433   | 433   |
| d_b, Bicycle Delay [s]                                   | 29.41 | 29.41 | 36.82 | 36.82 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.632 | 1.560 | 2.744 | 1.952 |
| Bicycle LOS  | A     | A     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 33.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.669 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound          |        |        |
| Lane Configuration           |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 0      | 1            | 0      | 0      | 1                  | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00               |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No                 |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes                |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 369             | 162    | 861    | 27              | 124    | 38     | 33           | 951    | 532    | 180                | 361    | 9      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 369             | 162    | 861    | 27              | 124    | 38     | 33           | 951    | 532    | 180                | 361    | 9      |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 92              | 41     | 215    | 7               | 31     | 10     | 8            | 238    | 133    | 45                 | 90     | 2      |
| Total Analysis Volume [veh/h]               | 369             | 162    | 861    | 27              | 124    | 38     | 33           | 951    | 532    | 180                | 361    | 9      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Unsigna | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 29       | 60      | 0       | 12       | 43      | 0       | 11       | 37      | 0       | 11       | 37      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 31      | 0       | 0        | 32      | 0       | 0        | 25      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | C     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 25    | 29    | 4     | 7     | 7     | 4     | 65    | 65    | 7     | 68    | 68    |
| g / C, Green / Cycle                    | 0.21  | 0.24  | 0.03  | 0.06  | 0.06  | 0.03  | 0.54  | 0.54  | 0.06  | 0.56  | 0.56  |
| (v / s)_i Volume / Saturation Flow Rate | 0.21  | 0.04  | 0.02  | 0.04  | 0.04  | 0.02  | 0.25  | 0.28  | 0.05  | 0.06  | 0.07  |
| s, saturation flow rate [veh/h]         | 1800  | 3800  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 375   | 912   | 55    | 118   | 118   | 62    | 2041  | 1020  | 207   | 2135  | 1067  |
| d1, Uniform Delay [s]                   | 47.32 | 36.21 | 57.27 | 55.17 | 55.10 | 57.04 | 17.16 | 17.87 | 56.03 | 12.32 | 12.35 |
| k, delay calibration                    | 0.32  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 33.34 | 0.09  | 6.61  | 7.09  | 6.51  | 7.03  | 0.77  | 1.91  | 10.72 | 0.11  | 0.23  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |       |        |        |       |        |        |        |       |       |
|---------------------------------------|--------|-------|-------|--------|--------|-------|--------|--------|--------|-------|-------|
| X, volume / capacity                  | 0.98   | 0.18  | 0.49  | 0.69   | 0.67   | 0.54  | 0.47   | 0.52   | 0.87   | 0.11  | 0.12  |
| d, Delay for Lane Group [s/veh]       | 80.66  | 36.30 | 63.88 | 62.27  | 61.61  | 64.06 | 17.93  | 19.78  | 66.75  | 12.42 | 12.58 |
| Lane Group LOS                        | F      | D     | E     | E      | E      | E     | B      | B      | E      | B     | B     |
| Critical Lane Group                   | Yes    | No    | No    | Yes    | No     | No    | No     | Yes    | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 14.39  | 1.91  | 0.91  | 2.67   | 2.58   | 1.11  | 8.17   | 9.80   | 3.01   | 1.55  | 1.66  |
| 50th-Percentile Queue Length [ft/ln]  | 359.66 | 47.77 | 22.71 | 66.79  | 64.50  | 27.66 | 204.13 | 244.98 | 75.30  | 38.81 | 41.42 |
| 95th-Percentile Queue Length [veh/ln] | 20.61  | 3.44  | 1.64  | 4.81   | 4.64   | 1.99  | 12.85  | 14.93  | 5.42   | 2.79  | 2.98  |
| 95th-Percentile Queue Length [ft/ln]  | 515.17 | 85.99 | 40.88 | 120.23 | 116.09 | 49.79 | 321.28 | 373.32 | 135.53 | 69.86 | 74.56 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |      |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 80.66 | 36.30 | 0.00 | 63.88 | 62.05 | 61.61 | 64.06 | 17.93 | 19.78 | 66.75 | 12.47 | 12.58 |
| Movement LOS                    | F     | D     |      | E     | E     | E     | E     | B     | B     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 67.13 |       |      | 62.22 |       |       | 19.58 |       |       | 30.24 |       |       |
| Approach LOS                    | E     |       |      | E     |       |       | B     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 33.64 |       |      |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |      |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.669 |       |      |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.689 | 2.390 | 2.926 | 2.925 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 933   | 650   | 550   | 550   |
| d_b, Bicycle Delay [s]                                   | 17.08 | 27.35 | 31.55 | 31.55 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.998 | 1.716 | 2.393 | 1.862 |
| Bicycle LOS  | A     | A     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.0   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.558 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ⤵             |        |        | ↵                  |        |        | ↵                  |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Curb Present                 | No            |        |        | No            |        |        | No                 |        |        | No                 |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |



**Volumes**

| Name  | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
|   |               |        |        |               |        |        |                    |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 12            | 0      | 2      | 0             | 0      | 23     | 2                  | 1859   | 2      | 1                  | 431    | 13     |
| Base Volume Adjustment Factor               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 12            | 0      | 2      | 0             | 0      | 23     | 2                  | 1859   | 2      | 1                  | 431    | 13     |
| Peak Hour Factor                            | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 3             | 0      | 1      | 0             | 0      | 6      | 1                  | 465    | 1      | 0                  | 108    | 3      |
| Total Analysis Volume [veh/h]               | 12            | 0      | 2      | 0             | 0      | 23     | 2                  | 1859   | 2      | 1                  | 431    | 13     |
| Presence of On-Street Parking               | No            |        | No     | No            |        | No     | No                 |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 0       | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 0       | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 0.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 35      | 0       | 0       | 0       | 35      | 10       | 75      | 0       | 10       | 75      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 24      | 0       | 0       | 0       | 0       | 0        | 17      | 0       | 0        | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         |         | No      |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 3     | 3     | 0     | 105  | 105  | 0     | 104  | 104  |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.00  | 0.87 | 0.87 | 0.00  | 0.87 | 0.87 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.01  | 0.00  | 0.49 | 0.49 | 0.00  | 0.11 | 0.01 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900 | 1900 | 1900  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 105   | 52    | 7     | 1654 | 1654 | 4     | 3303 | 1651 |
| d1, Uniform Delay [s]                   | 57.21 | 57.46 | 59.61 | 1.97 | 1.97 | 59.76 | 1.16 | 1.03 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.57  | 5.91  | 23.33 | 1.39 | 1.39 | 29.31 | 0.08 | 0.01 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |        |        |       |       |      |
|---------------------------------------|-------|-------|-------|--------|--------|-------|-------|------|
| X, volume / capacity                  | 0.13  | 0.45  | 0.30  | 0.56   | 0.56   | 0.25  | 0.13  | 0.01 |
| d, Delay for Lane Group [s/veh]       | 57.78 | 63.37 | 82.93 | 3.36   | 3.35   | 89.07 | 1.24  | 1.04 |
| Lane Group LOS                        | E     | E     | F     | A      | A      | F     | A     | A    |
| Critical Lane Group                   | No    | Yes   | No    | Yes    | No     | Yes   | No    | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.43  | 0.77  | 0.10  | 3.21   | 3.21   | 0.06  | 0.39  | 0.02 |
| 50th-Percentile Queue Length [ft/ln]  | 10.84 | 19.32 | 2.60  | 80.27  | 80.26  | 1.58  | 9.83  | 0.58 |
| 95th-Percentile Queue Length [veh/ln] | 0.78  | 1.39  | 0.19  | 5.78   | 5.78   | 0.11  | 0.71  | 0.04 |
| 95th-Percentile Queue Length [ft/ln]  | 19.51 | 34.77 | 4.67  | 144.49 | 144.48 | 2.84  | 17.70 | 1.04 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.78 | 57.78 | 57.78 | 0.00  | 0.00 | 63.37 | 82.93 | 3.36 | 3.35 | 89.07 | 1.24 | 1.04 |
| Movement LOS                    | E     | E     | E     |       |      | E     | F     | A    | A    | F     | A    | A    |
| d_A, Approach Delay [s/veh]     | 57.78 |       |       | 63.37 |      |       | 3.44  |      |      | 1.43  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 3.97  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.558 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.50 | 49.50 | 0.00  | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.737 | 1.747 | 0.000 | 2.841 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 517   | 517   | 1184  | 1184  |
| d_b, Bicycle Delay [s]                                   | 33.00 | 33.00 | 10.00 | 10.00 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.583 | 1.560 | 3.097 | 1.927 |
| Bicycle LOS  | A     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 39.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.876 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                         |        |        |                         |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 157                     | 478    | 171    | 393                     | 435    | 363    | 320          | 878    | 182    | 162          | 1130   | 749    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 157                     | 478    | 171    | 393                     | 435    | 363    | 320          | 878    | 182    | 162          | 1130   | 749    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 39                      | 120    | 43     | 98                      | 109    | 91     | 80           | 220    | 46     | 41           | 283    | 187    |
| Total Analysis Volume [veh/h]               | 157                     | 478    | 171    | 393                     | 435    | 363    | 320          | 878    | 182    | 162          | 1130   | 749    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 27       | 56      | 0       | 17       | 42      | 0       | 12       | 37      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 30      | 0       | 0        | 28      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 21    | 21    | 16    | 31    | 31    | 13    | 60    | 60    | 7     | 55    | 55    |
| g / C, Green / Cycle                    | 0.05  | 0.17  | 0.17  | 0.13  | 0.25  | 0.25  | 0.11  | 0.50  | 0.50  | 0.06  | 0.45  | 0.45  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.13  | 0.09  | 0.11  | 0.23  | 0.19  | 0.09  | 0.23  | 0.10  | 0.05  | 0.30  | 0.39  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 178   | 656   | 328   | 466   | 485   | 485   | 375   | 1893  | 947   | 220   | 1724  | 862   |
| d1, Uniform Delay [s]                   | 56.63 | 47.00 | 45.15 | 50.82 | 43.21 | 41.19 | 52.66 | 19.66 | 16.72 | 55.30 | 25.50 | 29.57 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 13.28 | 1.57  | 1.28  | 4.25  | 6.21  | 2.35  | 5.53  | 0.82  | 0.45  | 4.79  | 1.96  | 11.57 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.88   | 0.73   | 0.52   | 0.84   | 0.90   | 0.75   | 0.85   | 0.46   | 0.19   | 0.74   | 0.66   | 0.87   |
| d, Delay for Lane Group [s/veh]       | 69.91  | 48.57  | 46.43  | 55.07  | 49.42  | 43.53  | 58.19  | 20.48  | 17.17  | 60.09  | 27.46  | 41.14  |
| Lane Group LOS                        | E      | D      | D      | E      | D      | D      | E      | C      | B      | E      | C      | D      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | Yes    | No     | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 2.69   | 6.90   | 4.76   | 6.04   | 6.61   | 10.17  | 5.02   | 8.11   | 2.90   | 2.56   | 12.78  | 21.69  |
| 50th-Percentile Queue Length [ft/ln]  | 67.32  | 172.46 | 119.00 | 150.91 | 165.30 | 254.24 | 125.59 | 202.63 | 72.51  | 63.90  | 319.44 | 542.35 |
| 95th-Percentile Queue Length [veh/ln] | 4.85   | 11.21  | 8.34   | 10.07  | 10.83  | 15.40  | 8.70   | 12.77  | 5.22   | 4.60   | 18.64  | 29.33  |
| 95th-Percentile Queue Length [ft/ln]  | 121.18 | 280.15 | 208.46 | 251.64 | 270.73 | 384.99 | 217.49 | 319.35 | 130.52 | 115.03 | 466.00 | 733.32 |



**Movement, Approach, & Intersection Results**

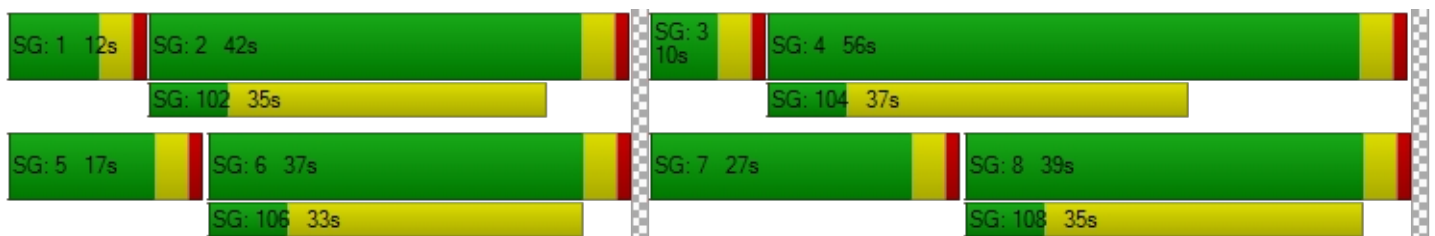
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 69.91 | 48.57 | 46.43 | 55.07 | 49.42 | 43.53 | 58.19 | 20.48 | 17.17 | 60.09 | 27.46 | 41.14 |
| Movement LOS                    | E     | D     | D     | E     | D     | D     | E     | C     | B     | E     | C     | D     |
| d_A, Approach Delay [s/veh]     | 52.27 |       |       | 49.49 |       |       | 28.79 |       |       | 35.07 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 39.20 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.876 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.828 | 2.989 | 3.030 | 3.093 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 583   | 866   | 633   | 550   |
| d_b, Bicycle Delay [s]                                   | 30.12 | 19.28 | 28.03 | 31.55 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.225 | 2.542 | 2.698 | 3.243 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.740 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T               |        |        | T T          |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 559               | 37     | 386    | 11                | 23     | 11     | 17           | 1013   | 349    | 321          | 1456   | 19     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 559               | 37     | 386    | 11                | 23     | 11     | 17           | 1013   | 349    | 321          | 1456   | 19     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 140               | 9      | 97     | 3                 | 6      | 3      | 4            | 253    | 87     | 80           | 364    | 5      |
| Total Analysis Volume [veh/h]               | 559               | 37     | 386    | 11                | 23     | 11     | 17           | 1013   | 349    | 321          | 1456   | 19     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 28       | 65      | 65      | 0       | 37      | 0       | 10       | 38      | 0       | 17       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 26      | 0       | 26      | 0       | 0        | 27      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 21    | 30    | 47    | 5     | 5     | 3     | 65    | 65    | 13    | 75    | 75    |
| g / C, Green / Cycle                    | 0.18  | 0.25  | 0.39  | 0.04  | 0.04  | 0.02  | 0.54  | 0.54  | 0.11  | 0.63  | 0.63  |
| (v / s)_i Volume / Saturation Flow Rate | 0.16  | 0.02  | 0.20  | 0.01  | 0.02  | 0.01  | 0.37  | 0.35  | 0.09  | 0.39  | 0.39  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  |
| c, Capacity [veh/h]                     | 624   | 477   | 746   | 77    | 75    | 40    | 1027  | 1027  | 380   | 1191  | 1191  |
| d1, Uniform Delay [s]                   | 48.21 | 34.34 | 27.76 | 55.73 | 56.40 | 57.94 | 20.18 | 19.35 | 52.51 | 13.66 | 13.65 |
| k, delay calibration                    | 0.11  | 0.11  | 0.31  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.83  | 0.07  | 1.61  | 0.84  | 4.29  | 7.10  | 3.76  | 3.04  | 5.18  | 2.43  | 2.42  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.90   | 0.08  | 0.52   | 0.14  | 0.46  | 0.43  | 0.69   | 0.64   | 0.84   | 0.62   | 0.62   |
| d, Delay for Lane Group [s/veh]       | 53.05  | 34.41 | 29.37  | 56.57 | 60.69 | 65.04 | 23.94  | 22.39  | 57.69  | 16.08  | 16.06  |
| Lane Group LOS                        | D      | C     | C      | E     | E     | E     | C      | C      | E      | B      | B      |
| Critical Lane Group                   | No     | No    | Yes    | No    | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 8.57   | 0.84  | 8.75   | 0.34  | 1.10  | 0.59  | 15.04  | 13.30  | 5.02   | 12.31  | 12.28  |
| 50th-Percentile Queue Length [ft/ln]  | 214.29 | 21.07 | 218.68 | 8.51  | 27.45 | 14.71 | 376.07 | 332.51 | 125.40 | 307.72 | 307.05 |
| 95th-Percentile Queue Length [veh/ln] | 13.37  | 1.52  | 13.60  | 0.61  | 1.98  | 1.06  | 21.40  | 19.28  | 8.69   | 18.06  | 18.03  |
| 95th-Percentile Queue Length [ft/ln]  | 334.33 | 37.93 | 339.94 | 15.33 | 49.41 | 26.49 | 535.09 | 482.03 | 217.22 | 451.56 | 450.73 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 53.05 | 34.41 | 29.37 | 56.57 | 60.69 | 60.69 | 65.04 | 23.47 | 22.39 | 57.69 | 16.07 | 16.06 |
| Movement LOS                    | D     | C     | C     | E     | E     | E     | E     | C     | C     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 43.04 |       |       | 59.68 |       |       | 23.71 |       |       | 23.51 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 28.53 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.740 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.739 | 1.992 | 2.978 | 3.003 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1017  | 550   | 567   | 683   |
| d_b, Bicycle Delay [s]                                   | 14.51 | 31.54 | 30.82 | 26.01 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.180 | 1.634 | 2.697 | 3.041 |
| Bicycle LOS  | C     | A     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.830 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐⇐               |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 15                | 2      | 12     | 119               | 3      | 335    | 321          | 1039   | 14     | 6            | 1485   | 156    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 15                | 2      | 12     | 119               | 3      | 335    | 321          | 1039   | 14     | 6            | 1485   | 156    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 4                 | 1      | 3      | 30                | 1      | 84     | 80           | 260    | 4      | 2            | 371    | 39     |
| Total Analysis Volume [veh/h]               | 15                | 2      | 12     | 119               | 3      | 335    | 321          | 1039   | 14     | 6            | 1485   | 156    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 39       | 61      | 0       | 10       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C    | C    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115  | 115  | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4     | 4     | 4     | 17    | 17    | 52    | 23    | 78   | 78   | 1     | 55    | 55    |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.03  | 0.14  | 0.14  | 0.45  | 0.20  | 0.67 | 0.67 | 0.01  | 0.48  | 0.48  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.00  | 0.01  | 0.03  | 0.03  | 0.18  | 0.18  | 0.28 | 0.28 | 0.00  | 0.39  | 0.08  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 95    | 62    | 62    | 259   | 259   | 855   | 367   | 1281 | 1281 | 18    | 1825  | 912   |
| d1, Uniform Delay [s]                   | 54.32 | 53.92 | 54.21 | 43.63 | 43.63 | 21.11 | 44.36 | 8.45 | 8.44 | 56.57 | 25.52 | 16.94 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.21  | 0.15  | 0.50 | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.77  | 0.21  | 1.51  | 0.46  | 0.46  | 0.58  | 8.84  | 0.98 | 0.97 | 10.15 | 4.11  | 0.41  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |        |        |       |        |        |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.16  | 0.03  | 0.19  | 0.23  | 0.24  | 0.39   | 0.87   | 0.41   | 0.41   | 0.33  | 0.81   | 0.17   |
| d, Delay for Lane Group [s/veh]       | 55.08 | 54.13 | 55.72 | 44.09 | 44.09 | 21.69  | 53.20  | 9.43   | 9.41   | 66.72 | 29.62  | 17.34  |
| Lane Group LOS                        | E     | D     | E     | D     | D     | C      | D      | A      | A      | E     | C      | B      |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | Yes    | Yes    | No     | No     | No    | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 0.44  | 0.06  | 0.36  | 1.58  | 1.58  | 6.11   | 9.71   | 5.83   | 5.80   | 0.22  | 17.75  | 2.43   |
| 50th-Percentile Queue Length [ft/ln]  | 11.11 | 1.49  | 9.12  | 39.39 | 39.48 | 152.85 | 242.86 | 145.72 | 144.92 | 5.61  | 443.87 | 60.84  |
| 95th-Percentile Queue Length [veh/ln] | 0.80  | 0.11  | 0.66  | 2.84  | 2.84  | 10.17  | 14.83  | 9.79   | 9.75   | 0.40  | 24.66  | 4.38   |
| 95th-Percentile Queue Length [ft/ln]  | 20.00 | 2.69  | 16.41 | 70.90 | 71.07 | 254.23 | 370.64 | 244.70 | 243.64 | 10.10 | 616.62 | 109.51 |

**Movement, Approach, & Intersection Results**

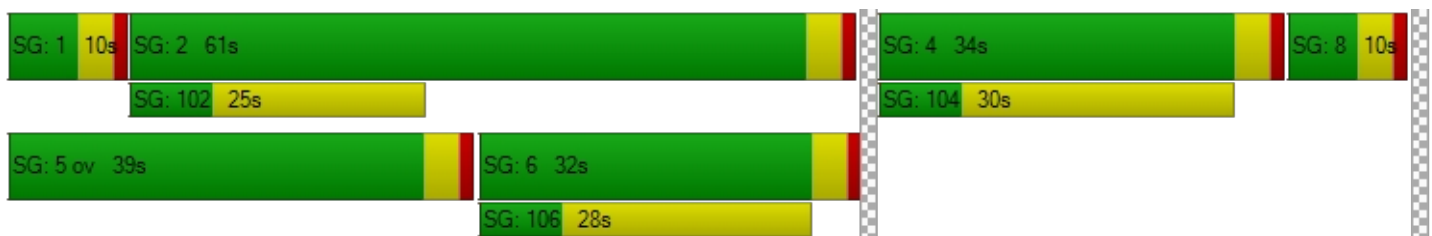
|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 55.08 | 54.13 | 55.72 | 44.09 | 44.09 | 21.69 | 53.20 | 9.42 | 9.41 | 66.72 | 29.62 | 17.34 |
| Movement LOS                    | E     | D     | E     | D     | D     | C     | D     | A    | A    | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 55.28 |       |       | 27.67 |       |       | 19.65 |      |      | 28.60 |       |       |
| Approach LOS                    | E     |       |       | C     |       |       | B     |      |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 25.19 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.830 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.155 | 2.371 | 2.959 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 104   | 522   | 991   | 487   |
| d_b, Bicycle Delay [s]                                   | 51.68 | 31.43 | 14.64 | 32.93 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.607 | 2.314 | 2.693 | 2.918 |
| Bicycle LOS  | A     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 47.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.734 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 674               | 815    | 141    | 234               | 411    | 124    | 244          | 819    | 333    | 88           | 807    | 245    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 674               | 815    | 141    | 234               | 411    | 124    | 244          | 819    | 333    | 88           | 807    | 245    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 169               | 204    | 35     | 59                | 103    | 31     | 61           | 205    | 83     | 22           | 202    | 61     |
| Total Analysis Volume [veh/h]               | 674               | 815    | 141    | 234               | 411    | 124    | 244          | 819    | 333    | 88           | 807    | 245    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 25       | 48      | 0       | 14       | 37      | 0       | 19       | 46      | 0       | 12       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 0       | 0        | 26      | 0       | 0        | 28      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 21    | 25    | 25    | 10    | 14    | 14    | 15    | 61    | 61    | 7     | 54    | 54    |
| g / C, Green / Cycle                    | 0.18  | 0.21  | 0.21  | 0.08  | 0.12  | 0.12  | 0.13  | 0.51  | 0.51  | 0.06  | 0.45  | 0.45  |
| (v / s)_i Volume / Saturation Flow Rate | 0.19  | 0.17  | 0.16  | 0.07  | 0.10  | 0.09  | 0.14  | 0.22  | 0.18  | 0.05  | 0.21  | 0.13  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 1800  | 3800  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 613   | 805   | 402   | 291   | 454   | 227   | 226   | 1937  | 969   | 112   | 1697  | 848   |
| d1, Uniform Delay [s]                   | 49.51 | 44.90 | 44.66 | 54.10 | 51.44 | 51.20 | 52.50 | 18.38 | 17.49 | 55.52 | 23.34 | 21.11 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 50.79 | 1.88  | 3.29  | 5.23  | 3.24  | 5.23  | 53.11 | 0.68  | 0.97  | 11.45 | 0.96  | 0.86  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 1.10   | 0.80   | 0.78   | 0.81   | 0.80   | 0.76   | 1.08   | 0.42   | 0.34   | 0.79   | 0.48   | 0.29   |
| d, Delay for Lane Group [s/veh]       | 100.30 | 46.78  | 47.95  | 59.33  | 54.68  | 56.43  | 105.61 | 19.06  | 18.46  | 66.97  | 24.30  | 21.97  |
| Lane Group LOS                        | F      | D      | D      | E      | D      | E      | F      | B      | B      | E      | C      | C      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | Yes    | No     | No     | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 13.48  | 9.26   | 9.14   | 3.68   | 5.50   | 5.37   | 10.12  | 7.20   | 5.69   | 2.98   | 8.19   | 4.58   |
| 50th-Percentile Queue Length [ft/ln]  | 336.94 | 231.59 | 228.48 | 92.10  | 137.51 | 134.32 | 252.89 | 179.93 | 142.17 | 74.58  | 204.82 | 114.42 |
| 95th-Percentile Queue Length [veh/ln] | 20.42  | 14.25  | 14.10  | 6.63   | 9.35   | 9.17   | 15.85  | 11.60  | 9.60   | 5.37   | 12.89  | 8.09   |
| 95th-Percentile Queue Length [ft/ln]  | 510.50 | 356.37 | 352.43 | 165.79 | 233.67 | 229.35 | 396.13 | 289.93 | 239.94 | 134.25 | 322.18 | 202.13 |

**Movement, Approach, & Intersection Results**

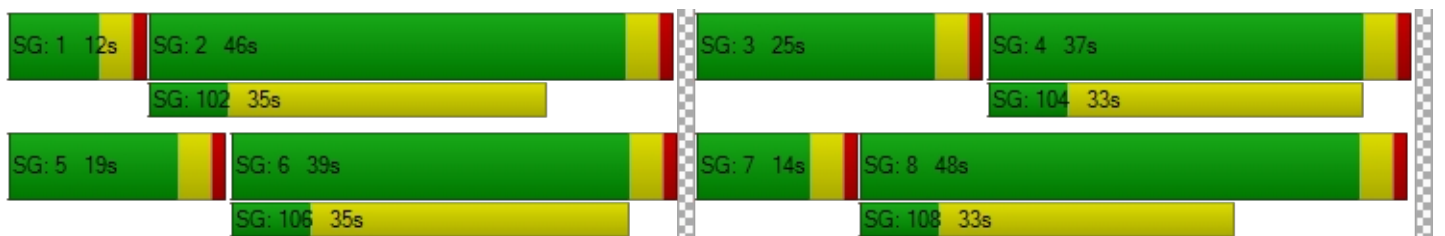
|                                 |        |       |       |       |       |       |        |       |       |       |       |       |
|---------------------------------|--------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 100.30 | 47.03 | 47.95 | 59.33 | 54.89 | 56.43 | 105.61 | 19.06 | 18.46 | 66.97 | 24.30 | 21.97 |
| Movement LOS                    | F      | D     | D     | E     | D     | E     | F      | B     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 69.14  |       |       | 56.49 |       |       | 34.05  |       |       | 27.09 |       |       |
| Approach LOS                    | E      |       |       | E     |       |       | C      |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 47.53  |       |       |       |       |       |        |       |       |       |       |       |
| Intersection LOS                | D      |       |       |       |       |       |        |       |       |       |       |       |
| Intersection V/C                | 0.734  |       |       |       |       |       |        |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 3.039 | 2.992 | 2.954 | 2.846 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 733   | 550   | 700   | 583   |
| d_b, Bicycle Delay [s]                                   | 24.08 | 31.55 | 25.36 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.456 | 1.983 | 2.711 | 2.500 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 74.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | E     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.104 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 221             | 649    | 18     | 498             | 270    | 48     | 206          | 703    | 155    | 14         | 539    | 846    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 221             | 649    | 18     | 498             | 270    | 48     | 206          | 703    | 155    | 14         | 539    | 846    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 55              | 162    | 5      | 125             | 68     | 12     | 52           | 176    | 39     | 4          | 135    | 212    |
| Total Analysis Volume [veh/h]               | 221             | 649    | 18     | 498             | 270    | 48     | 206          | 703    | 155    | 14         | 539    | 846    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 35       | 42      | 0       | 32       | 39      | 0       | 10       | 36      | 0       | 10       | 36      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L      | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120    | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 17    | 24    | 24    | 28     | 35    | 35    | 6     | 50    | 50    | 2     | 46    | 46    |
| g / C, Green / Cycle                    | 0.14  | 0.20  | 0.20  | 0.23   | 0.29  | 0.29  | 0.05  | 0.41  | 0.41  | 0.02  | 0.38  | 0.38  |
| (v / s)_i Volume / Saturation Flow Rate | 0.12  | 0.18  | 0.17  | 0.28   | 0.09  | 0.08  | 0.06  | 0.23  | 0.22  | 0.01  | 0.14  | 0.45  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800   | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 253   | 381   | 381   | 420    | 556   | 556   | 178   | 786   | 786   | 35    | 1453  | 727   |
| d1, Uniform Delay [s]                   | 50.52 | 46.62 | 46.52 | 46.03  | 32.85 | 32.69 | 56.98 | 26.91 | 26.42 | 58.15 | 26.68 | 37.07 |
| k, delay calibration                    | 0.11  | 0.13  | 0.13  | 0.50   | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.05  | 7.97  | 7.30  | 105.41 | 0.29  | 0.27  | 85.24 | 2.91  | 2.54  | 7.08  | 0.73  | 88.57 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |       |        |         |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|---------|
| X, volume / capacity                  | 0.87   | 0.88   | 0.87   | 1.19   | 0.29   | 0.28   | 1.16   | 0.56   | 0.53   | 0.40  | 0.37   | 1.16    |
| d, Delay for Lane Group [s/veh]       | 59.58  | 54.59  | 53.82  | 151.43 | 33.14  | 32.96  | 142.22 | 29.82  | 28.96  | 65.23 | 27.41  | 125.65  |
| Lane Group LOS                        | E      | D      | D      | F      | C      | C      | F      | C      | C      | E     | C      | F       |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | No     | No     | Yes    | No     | No     | No    | No     | Yes     |
| 50th-Percentile Queue Length [veh/ln] | 7.13   | 10.52  | 10.34  | 24.71  | 3.74   | 3.53   | 4.80   | 10.24  | 9.41   | 0.49  | 5.70   | 38.69   |
| 50th-Percentile Queue Length [ft/ln]  | 178.24 | 262.98 | 258.45 | 617.86 | 93.44  | 88.28  | 119.90 | 256.01 | 235.16 | 12.25 | 142.57 | 967.34  |
| 95th-Percentile Queue Length [veh/ln] | 11.51  | 15.84  | 15.61  | 36.08  | 6.73   | 6.36   | 8.63   | 15.49  | 14.44  | 0.88  | 9.62   | 54.23   |
| 95th-Percentile Queue Length [ft/ln]  | 287.72 | 395.96 | 390.28 | 901.91 | 168.19 | 158.90 | 215.81 | 387.22 | 360.90 | 22.05 | 240.48 | 1355.70 |

**Movement, Approach, & Intersection Results**

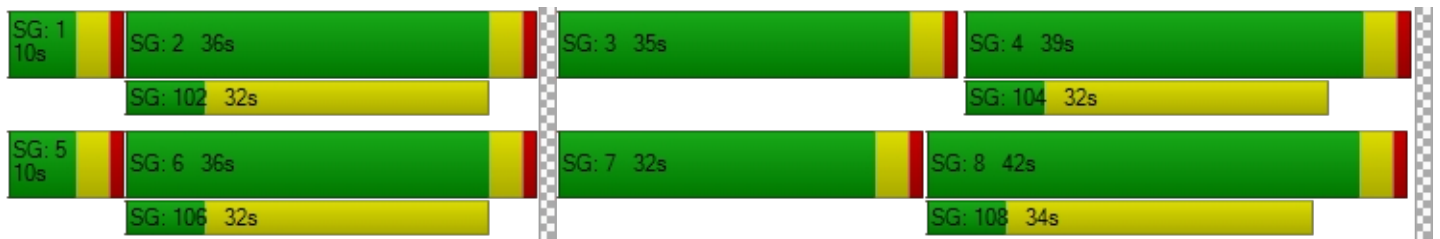
|                                 |       |       |       |        |       |       |        |       |       |       |       |        |
|---------------------------------|-------|-------|-------|--------|-------|-------|--------|-------|-------|-------|-------|--------|
| d_M, Delay for Movement [s/veh] | 59.58 | 54.22 | 53.82 | 151.43 | 33.07 | 32.96 | 142.22 | 29.50 | 28.96 | 65.23 | 27.41 | 125.65 |
| Movement LOS                    | E     | D     | D     | F      | C     | C     | F      | C     | C     | E     | C     | F      |
| d_A, Approach Delay [s/veh]     | 55.54 |       |       | 105.30 |       |       | 51.25  |       |       | 87.19 |       |        |
| Approach LOS                    | E     |       |       | F      |       |       | D      |       |       | F     |       |        |
| d_I, Intersection Delay [s/veh] | 74.82 |       |       |        |       |       |        |       |       |       |       |        |
| Intersection LOS                | E     |       |       |        |       |       |        |       |       |       |       |        |
| Intersection V/C                | 1.104 |       |       |        |       |       |        |       |       |       |       |        |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.572 | 2.804 | 2.771 | 2.892 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 633   | 583   | 533   | 533   |
| d_b, Bicycle Delay [s]                                   | 28.03 | 30.12 | 32.28 | 32.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.292 | 2.233 | 2.437 | 2.714 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 11.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.827 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|------------------------------|------------|--------|------------|--------|----------------|--------|
| Approach                     | Northbound |        | Southbound |        | Eastbound      |        |
| Lane Configuration           | ↵↑         |        | ↑↘         |        | ↵              |        |
| Turning Movement             | Left       | Thru   | Thru       | Right  | Left           | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00          | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 1      | 0          | 1      | 0              | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00         | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0              | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00           | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00          |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00           |        |
| Curb Present                 | No         |        | No         |        | No             |        |
| Crosswalk                    | Yes        |        | No         |        | Yes            |        |

**Volumes**

| Name  | Rose Drive |        | Rose Drive |        | Vesuvius Drive |        |
|---|------------|--------|------------|--------|----------------|--------|
|   |            |        |            |        |                |        |
| Base Volume Input [veh/h]                   | 169        | 1163   | 1255       | 101    | 49             | 118    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00       | 2.00   | 2.00           | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0          | 0      | 0              | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0          | 0      | 0              | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0          | 0      | 0              | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0          | 0      | 0              | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0              | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0          | 0      | 0              | 0      |
| Total Hourly Volume [veh/h]                 | 169        | 1163   | 1255       | 101    | 49             | 118    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000         | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 42         | 291    | 314        | 25     | 12             | 30     |
| Total Analysis Volume [veh/h]               | 169        | 1163   | 1255       | 101    | 49             | 118    |
| Presence of On-Street Parking               | No         | No     | No         | No     | No             | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0          | 0      | 0              | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0          | 0      | 0              | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        | 0          |        | 0              |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0              |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        | 0          |        | 0              |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        | 0          |        | 0              |        |
| Bicycle Volume [bicycles/h]                 | 0          |        | 0          |        | 0              |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissive | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|------------|------------|------------|------------|------------|------------|
| Signal Group                 | 0          | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |            |            |            |            |            |            |
| Lead / Lag                   | -          | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 0          | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 0          | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 0.0        | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 0          | 64         | 64         | 0          | 26         | 0          |
| Vehicle Extension [s]        | 0.0        | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0          | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0          | 0          | 14         | 0          | 15         | 0          |
| Delayed Vehicle Green [s]    | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |            | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 0.0        | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               |            | No         | No         |            | No         |            |
| Maximum Recall               |            | No         | No         |            | No         |            |
| Pedestrian Recall            |            | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | R    | C     |
|---|------|------|------|------|-------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90   | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           | 72   | 72   | 72   | 72   | 10    |
| g / C, Green / Cycle                    | 0.80 | 0.80 | 0.80 | 0.80 | 0.11  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.61 | 0.66 | 0.05 | 0.09  |
| s, saturation flow rate [veh/h]         | 1800 | 1900 | 1900 | 1900 | 1800  |
| c, Capacity [veh/h]                     | 724  | 1513 | 1513 | 1513 | 206   |
| d1, Uniform Delay [s]                   | 2.05 | 4.79 | 5.48 | 1.96 | 38.83 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| d2, Incremental Delay [s]               | 0.76 | 3.81 | 5.40 | 0.09 | 7.45  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |

**Lane Group Results**

|                                       |       |        |        |       |        |
|---------------------------------------|-------|--------|--------|-------|--------|
| X, volume / capacity                  | 0.23  | 0.77   | 0.83   | 0.07  | 0.81   |
| d, Delay for Lane Group [s/veh]       | 2.81  | 8.60   | 10.87  | 2.05  | 46.28  |
| Lane Group LOS                        | A     | A      | B      | A     | D      |
| Critical Lane Group                   | No    | No     | Yes    | No    | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 0.56  | 8.17   | 10.37  | 0.27  | 3.97   |
| 50th-Percentile Queue Length [ft/ln]  | 14.01 | 204.26 | 259.22 | 6.74  | 99.20  |
| 95th-Percentile Queue Length [veh/ln] | 1.01  | 12.86  | 15.65  | 0.49  | 7.14   |
| 95th-Percentile Queue Length [ft/ln]  | 25.23 | 321.45 | 391.25 | 12.13 | 178.55 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |       |       |
|---------------------------------|-------|------|-------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 2.81  | 8.60 | 10.87 | 2.05 | 46.28 | 46.28 |
| Movement LOS                    | A     | A    | B     | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 7.87  |      | 10.22 |      | 46.28 |       |
| Approach LOS                    | A     |      | B     |      | D     |       |
| d_I, Intersection Delay [s/veh] | 11.23 |      |       |      |       |       |
| Intersection LOS                | B     |      |       |      |       |       |
| Intersection V/C                | 0.827 |      |       |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.63 | 0.00  | 34.63 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.819 | 0.000 | 2.168 |
| Crosswalk LOS  | C     | F     | B     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1335  | 1335  | 489   |
| d_b, Bicycle Delay [s]                                   | 4.98  | 4.98  | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.757 | 3.797 | 1.835 |
| Bicycle LOS  | D     | D     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.809 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐              |        |        | ⇐                |        |        | ⇐         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Curb Present                 |                |        |        | No               |        |        | No               |        |        | No        |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name  |        |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |        |        |        |                |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 0      | 0      | 0      | 759            | 0      | 619    | 0                | 1919   | 1154   | 0                | 2744   | 467    |
| Base Volume Adjustment Factor               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00   | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0      | 0      | 0      | 759            | 0      | 619    | 0                | 1919   | 1154   | 0                | 2744   | 467    |
| Peak Hour Factor                            | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0      | 0      | 0      | 190            | 0      | 155    | 0                | 480    | 289    | 0                | 686    | 117    |
| Total Analysis Volume [veh/h]               | 0      | 0      | 0      | 759            | 0      | 619    | 0                | 1919   | 1154   | 0                | 2744   | 467    |
| Presence of On-Street Parking               |        |        |        | No             |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 64    | 0       | 0     | 0       | 26      | 0       | 0       | 26      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 15      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | C     | C     |
|---|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 28    | 28    | 28    | 54    | 54    |
| g / C, Green / Cycle                    | 0.31  | 0.31  | 0.31  | 0.60  | 0.60  |
| (v / s)_i Volume / Saturation Flow Rate | 0.26  | 0.26  | 0.24  | 0.34  | 0.48  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 5700  | 5700  |
| c, Capacity [veh/h]                     | 550   | 550   | 581   | 3451  | 3451  |
| d1, Uniform Delay [s]                   | 29.08 | 29.08 | 28.56 | 10.55 | 13.49 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 3.42  | 3.42  | 2.47  | 0.65  | 1.98  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.84   | 0.79   | 0.56   | 0.80   |
| d, Delay for Lane Group [s/veh]       | 32.50  | 32.50  | 31.04  | 11.20  | 15.47  |
| Lane Group LOS                        | C      | C      | C      | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 9.43   | 9.43   | 9.15   | 6.94   | 12.95  |
| 50th-Percentile Queue Length [ft/ln]  | 235.78 | 235.78 | 228.73 | 173.61 | 323.85 |
| 95th-Percentile Queue Length [veh/ln] | 14.47  | 14.47  | 14.11  | 11.27  | 18.86  |
| 95th-Percentile Queue Length [ft/ln]  | 361.69 | 361.69 | 352.74 | 281.65 | 471.41 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |       |       |      |       |       |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 32.50 | 0.00 | 31.41 | 0.00  | 11.20 | 0.00 | 0.00  | 15.47 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | B     |      |       | B     |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 32.01 |      |       | 11.20 |       |      | 15.47 |       |      |
| Approach LOS                    | A     |      |      | C     |      |       | B     |       |      | B     |       |      |
| d_I, Intersection Delay [s/veh] | 17.89 |      |      |       |      |       |       |       |      |       |       |      |
| Intersection LOS                | B     |      |      |       |      |       |       |       |      |       |       |      |
| Intersection V/C                | 0.809 |      |      |       |      |       |       |       |      |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 0.000 | 2.466 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                   | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 3.833 | 2.615 | 3.069 |
| Bicycle LOS  | D     | D     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 39.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.882 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No             |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |



**Volumes**

| Name  | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]                   | 1163           | 72     | 493    | 0               | 0      | 232    | 207              | 2126   | 430    | 0                | 2800   | 46     |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 1163           | 72     | 493    | 0               | 0      | 232    | 207              | 2126   | 430    | 0                | 2800   | 46     |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 291            | 18     | 123    | 0               | 0      | 58     | 52               | 532    | 108    | 0                | 700    | 12     |
| Total Analysis Volume [veh/h]               | 1163           | 72     | 493    | 0               | 0      | 232    | 207              | 2126   | 430    | 0                | 2800   | 46     |
| Presence of On-Street Parking               | No             |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0       | 6     | 6        | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0       | 30    | 30       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0     | 1.0   | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0     | 37    | 0     | 0     | 0       | 12    | 19       | 71      | 0       | 0       | 52      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 22      | 0       | 0       | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       |         | No    |          | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Maximum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Pedestrian Recall            |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | R     | L     | C     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 32    | 32    | 32    | 8     | 15    | 68    | 49    | 49    |
| g / C, Green / Cycle                    | 0.27  | 0.27  | 0.27  | 0.07  | 0.13  | 0.57  | 0.41  | 0.41  |
| (v / s)_i Volume / Saturation Flow Rate | 0.24  | 0.24  | 0.23  | 0.06  | 0.12  | 0.37  | 0.37  | 0.37  |
| s, saturation flow rate [veh/h]         | 3500  | 1800  | 1900  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 929   | 478   | 504   | 254   | 225   | 3236  | 2333  | 778   |
| d1, Uniform Delay [s]                   | 42.79 | 42.81 | 42.10 | 55.65 | 51.90 | 17.88 | 33.47 | 33.47 |
| k, delay calibration                    | 0.11  | 0.37  | 0.34  | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.14  | 20.19 | 13.09 | 12.29 | 14.15 | 1.06  | 7.00  | 17.16 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.92   | 0.92   | 0.87   | 0.91   | 0.92   | 0.66   | 0.91   | 0.91   |
| d, Delay for Lane Group [s/veh]       | 46.93  | 63.00  | 55.19  | 67.94  | 66.05  | 18.94  | 40.47  | 50.63  |
| Lane Group LOS                        | D      | E      | E      | E      | E      | B      | D      | D      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 12.68  | 15.19  | 14.14  | 3.92   | 7.03   | 13.36  | 20.64  | 22.84  |
| 50th-Percentile Queue Length [ft/ln]  | 316.90 | 379.73 | 353.38 | 98.01  | 175.81 | 333.92 | 516.04 | 570.92 |
| 95th-Percentile Queue Length [veh/ln] | 18.52  | 21.58  | 20.30  | 7.06   | 11.38  | 19.35  | 28.09  | 30.67  |
| 95th-Percentile Queue Length [ft/ln]  | 462.88 | 539.52 | 507.53 | 176.42 | 284.54 | 483.76 | 702.32 | 766.85 |

**Movement, Approach, & Intersection Results**

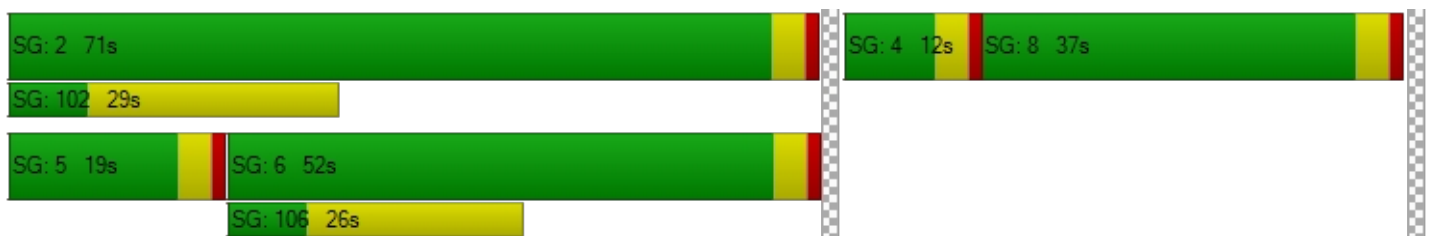
|                                 |       |       |       |       |      |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 51.15 | 63.00 | 56.16 | 0.00  | 0.00 | 67.94 | 66.05 | 18.94 | 0.00 | 0.00  | 42.89 | 50.63 |
| Movement LOS                    | D     | E     | E     |       |      | E     | E     | B     |      |       | D     | D     |
| d_A, Approach Delay [s/veh]     | 53.10 |       |       | 67.94 |      |       | 23.12 |       |      | 43.01 |       |       |
| Approach LOS                    | D     |       |       | E     |      |       | C     |       |      | D     |       |       |
| d_I, Intersection Delay [s/veh] | 39.76 |       |       |       |      |       |       |       |      |       |       |       |
| Intersection LOS                | D     |       |       |       |      |       |       |       |      |       |       |       |
| Intersection V/C                | 0.882 |       |       |       |      |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.651 | 2.135 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 550   | 133   | 1117  | 800   |
| d_b, Bicycle Delay [s]                                   | 31.54 | 52.27 | 11.71 | 21.60 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.411 | 1.560 | 2.843 | 2.734 |
| Bicycle LOS  | E     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 47.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.940 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                 |        |        | No                 |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   | 252                | 286    | 101    | 335                | 393    | 294    | 311              | 2147   | 161    | 209              | 1983   | 213    |
| Base Volume Input [veh/h]                   | 252                | 286    | 101    | 335                | 393    | 294    | 311              | 2147   | 161    | 209              | 1983   | 213    |
| Base Volume Adjustment Factor               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 252                | 286    | 101    | 335                | 393    | 294    | 311              | 2147   | 161    | 209              | 1983   | 213    |
| Peak Hour Factor                            | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 63                 | 72     | 25     | 84                 | 98     | 74     | 78               | 537    | 40     | 52               | 496    | 53     |
| Total Analysis Volume [veh/h]               | 252                | 286    | 101    | 335                | 393    | 294    | 311              | 2147   | 161    | 209              | 1983   | 213    |
| Presence of On-Street Parking               | No                 |        | No     | No                 |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 13       | 39      | 0       | 15       | 41      | 0       | 25       | 43      | 0       | 18       | 36      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 29      | 0       | 0        | 26      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 9     | 25    | 25    | 11    | 27    | 27    | 21    | 49    | 49    | 14    | 42    | 42    |
| g / C, Green / Cycle                    | 0.08  | 0.21  | 0.21  | 0.10  | 0.23  | 0.23  | 0.18  | 0.43  | 0.43  | 0.12  | 0.37  | 0.37  |
| (v / s)_i Volume / Saturation Flow Rate | 0.07  | 0.11  | 0.10  | 0.10  | 0.21  | 0.15  | 0.17  | 0.40  | 0.41  | 0.12  | 0.29  | 0.30  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  | 1800  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 279   | 407   | 407   | 339   | 440   | 440   | 329   | 1624  | 812   | 221   | 2093  | 698   |
| d1, Uniform Delay [s]                   | 52.57 | 39.77 | 39.41 | 51.95 | 42.89 | 40.24 | 46.47 | 31.46 | 32.25 | 50.15 | 32.32 | 32.79 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.20  | 0.11  | 0.20  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 10.63 | 0.93  | 0.80  | 20.21 | 11.13 | 1.76  | 20.68 | 11.55 | 25.10 | 17.91 | 2.96  | 9.76  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.90   | 0.49   | 0.46   | 0.99   | 0.89   | 0.67   | 0.94   | 0.94   | 0.97   | 0.95   | 0.78   | 0.81   |
| d, Delay for Lane Group [s/veh]       | 63.20  | 40.71  | 40.21  | 72.15  | 54.02  | 42.01  | 67.15  | 43.01  | 57.35  | 68.05  | 35.28  | 42.56  |
| Lane Group LOS                        | E      | D      | D      | E      | D      | D      | E      | D      | E      | E      | D      | D      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.02   | 5.11   | 4.67   | 5.77   | 12.11  | 7.76   | 10.63  | 22.09  | 26.37  | 7.05   | 13.78  | 15.78  |
| 50th-Percentile Queue Length [ft/ln]  | 100.44 | 127.87 | 116.66 | 144.20 | 302.64 | 193.98 | 265.72 | 552.34 | 659.29 | 176.29 | 344.48 | 394.38 |
| 95th-Percentile Queue Length [veh/ln] | 7.23   | 8.82   | 8.21   | 9.71   | 17.81  | 12.33  | 15.98  | 29.80  | 34.79  | 11.41  | 19.87  | 22.29  |
| 95th-Percentile Queue Length [ft/ln]  | 180.79 | 220.60 | 205.23 | 242.67 | 445.29 | 308.19 | 399.39 | 745.05 | 869.84 | 285.16 | 496.68 | 557.22 |



**Movement, Approach, & Intersection Results**

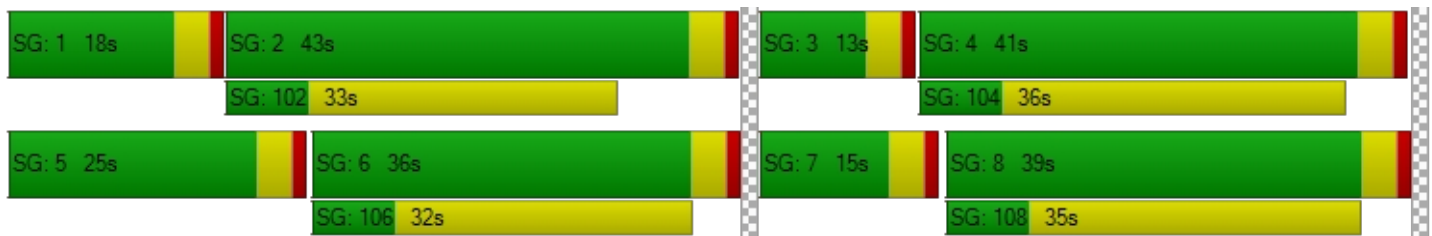
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 63.20 | 40.56 | 40.21 | 72.15 | 54.02 | 42.01 | 67.15 | 47.20 | 57.35 | 68.05 | 36.57 | 42.56 |
| Movement LOS                    | E     | D     | D     | E     | D     | D     | E     | D     | E     | E     | D     | D     |
| d_A, Approach Delay [s/veh]     | 49.43 |       |       | 56.51 |       |       | 50.19 |       |       | 39.83 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | D     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 47.36 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.940 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 47.07 |  |  | 47.07 |  |  | 47.07 |  |  | 47.07 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.585 |  |  | 2.762 |  |  | 3.365 |  |  | 3.345 |  |  |
| Crosswalk LOS  | B     |  |  | C     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 608   |  |  | 643   |  |  | 678   |  |  | 556   |  |  |
| d_b, Bicycle Delay [s]                                   | 27.86 |  |  | 26.49 |  |  | 25.15 |  |  | 29.99 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.087 |  |  | 3.246 |  |  | 3.000 |  |  | 2.552 |  |  |
| Bicycle LOS  | B     |  |  | C     |  |  | C     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 27.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.839 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No               |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name  | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 295              | 54     | 307    | 29              | 26     | 16     | 22               | 2161   | 323    | 267              | 2241   | 66     |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 295              | 54     | 307    | 29              | 26     | 16     | 22               | 2161   | 323    | 267              | 2241   | 66     |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 74               | 14     | 77     | 7               | 7      | 4      | 6                | 540    | 81     | 67               | 560    | 17     |
| Total Analysis Volume [veh/h]               | 295              | 54     | 307    | 29              | 26     | 16     | 22               | 2161   | 323    | 267              | 2241   | 66     |
| Presence of On-Street Parking               | No               |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 28    | 0     | 0     | 10    | 0     | 10       | 32      | 0       | 35       | 57      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0        | 21      | 0       | 0        | 14      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 20    | 20    | 20    | 5     | 5     | 3     | 46    | 46    | 18    | 61    | 61    |
| g / C, Green / Cycle                    | 0.19  | 0.19  | 0.19  | 0.05  | 0.05  | 0.03  | 0.44  | 0.44  | 0.17  | 0.58  | 0.58  |
| (v / s)_i Volume / Saturation Flow Rate | 0.10  | 0.10  | 0.16  | 0.02  | 0.02  | 0.01  | 0.38  | 0.17  | 0.15  | 0.40  | 0.42  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 1800  | 1900  | 1800  | 5700  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 333   | 333   | 352   | 92    | 97    | 51    | 2522  | 841   | 305   | 2218  | 1109  |
| d1, Uniform Delay [s]                   | 38.63 | 38.69 | 41.64 | 48.12 | 48.41 | 50.25 | 26.32 | 19.69 | 42.57 | 15.16 | 15.61 |
| k, delay calibration                    | 0.11  | 0.11  | 0.13  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.26  | 1.30  | 8.16  | 1.95  | 3.05  | 5.74  | 4.02  | 1.33  | 7.86  | 1.73  | 3.92  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.52   | 0.53   | 0.87   | 0.32  | 0.43  | 0.43  | 0.86   | 0.38   | 0.88   | 0.68   | 0.71   |
| d, Delay for Lane Group [s/veh]       | 39.89  | 39.98  | 49.80  | 50.07 | 51.46 | 55.99 | 30.34  | 21.02  | 50.43  | 16.89  | 19.53  |
| Lane Group LOS                        | D      | D      | D      | D     | D     | E     | C      | C      | D      | B      | B      |
| Critical Lane Group                   | No     | No     | Yes    | No    | Yes   | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.12   | 4.18   | 8.44   | 0.78  | 1.15  | 0.65  | 16.47  | 5.52   | 7.36   | 12.21  | 13.76  |
| 50th-Percentile Queue Length [ft/ln]  | 103.06 | 104.59 | 211.07 | 19.54 | 28.71 | 16.22 | 411.74 | 137.99 | 184.09 | 305.13 | 344.02 |
| 95th-Percentile Queue Length [veh/ln] | 7.42   | 7.53   | 13.21  | 1.41  | 2.07  | 1.17  | 23.13  | 9.37   | 11.81  | 17.93  | 19.84  |
| 95th-Percentile Queue Length [ft/ln]  | 185.50 | 188.27 | 330.20 | 35.17 | 51.67 | 29.19 | 578.13 | 234.32 | 295.34 | 448.37 | 496.11 |

**Movement, Approach, & Intersection Results**

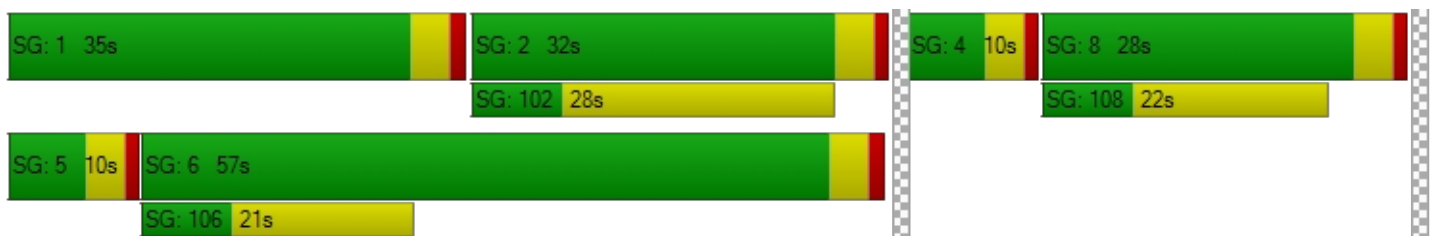
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 39.93 | 39.98 | 49.80 | 50.07 | 51.46 | 51.46 | 55.99 | 30.34 | 21.02 | 50.43 | 17.74 | 19.53 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | E     | C     | C     | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 44.55 |       |       | 50.89 |       |       | 29.37 |       |       | 21.18 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 27.72 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.839 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.11 | 42.11 | 0.00  | 42.11 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.448 | 2.017 | 0.000 | 3.308 |
| Crosswalk LOS  | B     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 457   | 114   | 533   | 1009  |
| d_b, Bicycle Delay [s]                                   | 31.27 | 46.70 | 28.26 | 12.90 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.642 | 1.677 | 2.938 | 2.975 |
| Bicycle LOS  | B     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 39.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.880 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O T             |        |        | T O T             |        |        | T O T            |        |        | T O T            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                   |        |        |                   |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 418               | 671    | 118    | 300               | 519    | 133    | 247              | 1596   | 251    | 211              | 1780   | 364    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 418               | 671    | 118    | 300               | 519    | 133    | 247              | 1596   | 251    | 211              | 1780   | 364    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 105               | 168    | 30     | 75                | 130    | 33     | 62               | 399    | 63     | 53               | 445    | 91     |
| Total Analysis Volume [veh/h]               | 418               | 671    | 118    | 300               | 519    | 133    | 247              | 1596   | 251    | 211              | 1780   | 364    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 18       | 34      | 0       | 14       | 30      | 0       | 13       | 42      | 0       | 15       | 44      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 19      | 0       | 0        | 19      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 14    | 25    | 25    | 10    | 21    | 21    | 9     | 46    | 46    | 8     | 45    | 45    |
| g / C, Green / Cycle                    | 0.13  | 0.24  | 0.24  | 0.10  | 0.20  | 0.20  | 0.09  | 0.43  | 0.43  | 0.08  | 0.43  | 0.43  |
| (v / s)_i Volume / Saturation Flow Rate | 0.12  | 0.21  | 0.20  | 0.09  | 0.14  | 0.07  | 0.07  | 0.32  | 0.32  | 0.06  | 0.38  | 0.37  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 470   | 451   | 451   | 338   | 759   | 379   | 305   | 1646  | 823   | 284   | 1623  | 811   |
| d1, Uniform Delay [s]                   | 44.79 | 38.88 | 38.38 | 46.98 | 39.04 | 36.25 | 47.19 | 25.05 | 24.96 | 47.29 | 27.72 | 27.63 |
| k, delay calibration                    | 0.11  | 0.26  | 0.24  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.97  | 14.07 | 9.64  | 7.91  | 1.10  | 0.55  | 5.15  | 3.19  | 6.05  | 3.85  | 7.31  | 12.88 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.89   | 0.90   | 0.85   | 0.89   | 0.68   | 0.35   | 0.81   | 0.75   | 0.74   | 0.74   | 0.88   | 0.88   |
| d, Delay for Lane Group [s/veh]       | 50.76  | 52.95  | 48.01  | 54.89  | 40.14  | 36.80  | 52.33  | 28.24  | 31.00  | 51.14  | 35.03  | 40.51  |
| Lane Group LOS                        | D      | D      | D      | D      | D      | D      | D      | C      | C      | D      | D      | D      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | No     | No     | Yes    | No     | No     | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 5.71   | 11.72  | 10.56  | 4.23   | 6.27   | 2.99   | 3.38   | 13.20  | 13.71  | 2.84   | 17.52  | 18.64  |
| 50th-Percentile Queue Length [ft/ln]  | 142.71 | 292.95 | 263.91 | 105.73 | 156.86 | 74.71  | 84.49  | 329.92 | 342.66 | 71.08  | 438.02 | 465.91 |
| 95th-Percentile Queue Length [veh/ln] | 9.63   | 17.33  | 15.88  | 7.60   | 10.38  | 5.38   | 6.08   | 19.15  | 19.78  | 5.12   | 24.39  | 25.72  |
| 95th-Percentile Queue Length [ft/ln]  | 240.66 | 433.30 | 397.12 | 190.04 | 259.56 | 134.48 | 152.07 | 478.86 | 494.45 | 127.95 | 609.64 | 642.91 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 50.76 | 50.99 | 48.01 | 54.89 | 40.14 | 36.80 | 52.33 | 28.87 | 31.00 | 51.14 | 36.10 | 40.51 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | C     | C     | D     | D     | D     |
| d_A, Approach Delay [s/veh]     | 50.62 |       |       | 44.32 |       |       | 31.89 |       |       | 38.13 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 39.33 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.880 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.14 | 42.14 | 42.14 | 42.14 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.816 | 2.912 | 3.272 | 3.265 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 571   | 495   | 723   | 761   |
| d_b, Bicycle Delay [s]                                   | 26.84 | 29.78 | 21.43 | 20.17 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.555 | 2.345 | 2.711 | 2.855 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.639 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Symbol]        |        |        | [Symbol]        |        |        | [Symbol]         |        |        | [Symbol]         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                 |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 131             | 271    | 145    | 234             | 229    | 132    | 237              | 2032   | 171    | 189              | 1478   | 144    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 131             | 271    | 145    | 234             | 229    | 132    | 237              | 2032   | 171    | 189              | 1478   | 144    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 33              | 68     | 36     | 59              | 57     | 33     | 59               | 508    | 43     | 47               | 370    | 36     |
| Total Analysis Volume [veh/h]               | 131             | 271    | 145    | 234             | 229    | 132    | 237              | 2032   | 171    | 189              | 1478   | 144    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 15       | 46      | 0       | 17       | 48      | 0       | 18       | 44      | 0       | 13       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 35      | 0       | 0        | 37      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 12    | 12    | 10    | 16    | 16    | 10    | 74    | 74   | 8     | 72    | 72    |
| g / C, Green / Cycle                    | 0.05  | 0.10  | 0.10  | 0.08  | 0.13  | 0.13  | 0.09  | 0.61  | 0.61 | 0.07  | 0.60  | 0.60  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.07  | 0.08  | 0.07  | 0.06  | 0.07  | 0.07  | 0.36  | 0.09 | 0.05  | 0.26  | 0.08  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 5700  | 1900 | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 190   | 378   | 189   | 296   | 492   | 246   | 300   | 3491  | 1164 | 247   | 3404  | 1135  |
| d1, Uniform Delay [s]                   | 55.76 | 52.43 | 52.71 | 53.93 | 48.41 | 48.89 | 53.83 | 14.02 | 9.91 | 54.82 | 13.15 | 10.54 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.36  | 2.56  | 6.41  | 4.76  | 0.69  | 1.82  | 4.66  | 0.72  | 0.27 | 4.92  | 0.41  | 0.23  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |        |        |        |        |        |       |        |        |       |
|---------------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|
| X, volume / capacity                  | 0.69  | 0.72   | 0.77   | 0.79   | 0.47   | 0.54   | 0.79   | 0.58   | 0.15  | 0.77   | 0.43   | 0.13  |
| d, Delay for Lane Group [s/veh]       | 60.13 | 54.99  | 59.12  | 58.69  | 49.10  | 50.71  | 58.49  | 14.73  | 10.18 | 59.75  | 13.55  | 10.77 |
| Lane Group LOS                        | E     | D      | E      | E      | D      | D      | E      | B      | B     | E      | B      | B     |
| Critical Lane Group                   | No    | No     | Yes    | Yes    | No     | No     | No     | Yes    | No    | Yes    | No     | No    |
| 50th-Percentile Queue Length [veh/ln] | 2.07  | 4.10   | 4.60   | 3.66   | 3.23   | 3.83   | 3.70   | 10.77  | 1.97  | 2.98   | 7.13   | 1.71  |
| 50th-Percentile Queue Length [ft/ln]  | 51.63 | 102.40 | 114.96 | 91.56  | 80.82  | 95.83  | 92.59  | 269.30 | 49.20 | 74.44  | 178.13 | 42.80 |
| 95th-Percentile Queue Length [veh/ln] | 3.72  | 7.37   | 8.12   | 6.59   | 5.82   | 6.90   | 6.67   | 16.15  | 3.54  | 5.36   | 11.50  | 3.08  |
| 95th-Percentile Queue Length [ft/ln]  | 92.94 | 184.31 | 202.88 | 164.81 | 145.48 | 172.50 | 166.67 | 403.86 | 88.55 | 133.99 | 287.57 | 77.03 |

**Movement, Approach, & Intersection Results**

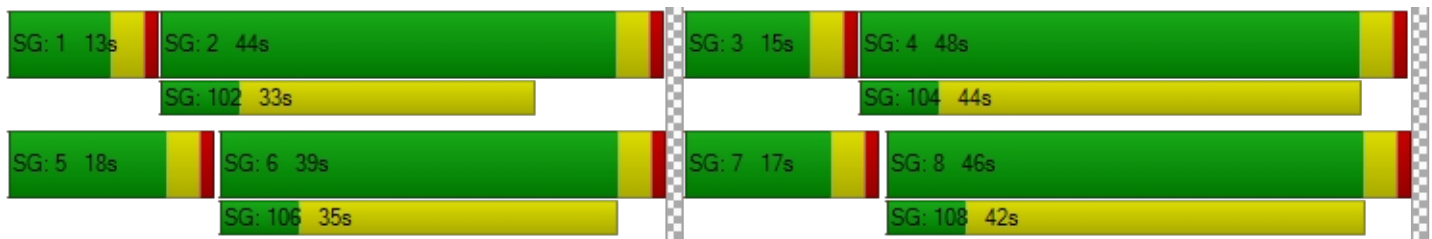
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 60.13 | 54.99 | 59.12 | 58.69 | 49.10 | 50.71 | 58.49 | 14.73 | 10.18 | 59.75 | 13.55 | 10.77 |
| Movement LOS                    | E     | D     | E     | E     | D     | D     | E     | B     | B     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 57.32 |       |       | 53.23 |       |       | 18.66 |       |       | 18.15 |       |       |
| Approach LOS                    | E     |       |       | D     |       |       | B     |       |       | B     |       |       |
| d_I, Intersection Delay [s/veh] | 26.23 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.639 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.766 |  |  | 2.781 |  |  | 3.316 |  |  | 3.320 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 700   |  |  | 733   |  |  | 666   |  |  | 583   |  |  |
| d_b, Bicycle Delay [s]                                   | 25.36 |  |  | 24.08 |  |  | 26.68 |  |  | 30.12 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.011 |  |  | 2.050 |  |  | 2.902 |  |  | 2.556 |  |  |
| Bicycle LOS  | B     |  |  | B     |  |  | C     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 237.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.079 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |            |        |        |            |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 306        | 561    | 143    | 1019       | 487    | 22     | 77               | 1994   | 315    | 176              | 1553   | 862    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 306        | 561    | 143    | 1019       | 487    | 22     | 77               | 1994   | 315    | 176              | 1553   | 862    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 77         | 140    | 36     | 255        | 122    | 6      | 19               | 499    | 79     | 44               | 388    | 216    |
| Total Analysis Volume [veh/h]               | 306        | 561    | 143    | 1019       | 487    | 22     | 77               | 1994   | 315    | 176              | 1553   | 862    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 15       | 53      | 0       | 12       | 50      | 0       | 10       | 45      | 0       | 10       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 42      | 0       | 0        | 36      | 0       | 0        | 34      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L       | C     | R     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00    | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00    | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 11    | 21    | 21    | 8       | 18    | 18    | 6     | 69    | 69    | 6     | 69    | 69    |
| g / C, Green / Cycle                    | 0.09  | 0.18  | 0.18  | 0.07    | 0.15  | 0.15  | 0.05  | 0.57  | 0.57  | 0.05  | 0.57  | 0.57  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.15  | 0.08  | 0.29    | 0.13  | 0.01  | 0.04  | 0.40  | 0.41  | 0.05  | 0.27  | 0.45  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500    | 3800  | 1900  | 1800  | 3800  | 1900  | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 323   | 670   | 335   | 236     | 575   | 288   | 91    | 2175  | 1088  | 178   | 3263  | 1088  |
| d1, Uniform Delay [s]                   | 54.21 | 47.79 | 44.05 | 55.99   | 49.59 | 43.74 | 56.51 | 18.42 | 18.51 | 56.96 | 15.09 | 20.09 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.14    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 13.79 | 2.89  | 0.86  | 1498.20 | 3.56  | 0.11  | 18.16 | 1.96  | 3.95  | 29.23 | 0.50  | 5.95  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |       |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|-------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.95   | 0.84   | 0.43   | 4.32    | 0.85   | 0.08  | 0.84   | 0.71   | 0.71   | 0.99   | 0.48   | 0.79   |
| d, Delay for Lane Group [s/veh]       | 68.00  | 50.68  | 44.92  | 1554.19 | 53.15  | 43.86 | 74.67  | 20.38  | 22.46  | 86.19  | 15.59  | 26.03  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D     | E      | C      | C      | F      | B      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes     | No     | No    | Yes    | No     | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 5.21   | 8.36   | 3.88   | 52.62   | 7.38   | 0.57  | 2.78   | 15.21  | 15.99  | 3.39   | 8.22   | 19.70  |
| 50th-Percentile Queue Length [ft/ln]  | 130.27 | 208.98 | 97.06  | 1315.39 | 184.58 | 14.37 | 69.40  | 380.28 | 399.78 | 84.69  | 205.60 | 492.45 |
| 95th-Percentile Queue Length [veh/ln] | 8.95   | 13.10  | 6.99   | 79.06   | 11.84  | 1.03  | 5.00   | 21.61  | 22.55  | 6.10   | 12.93  | 26.98  |
| 95th-Percentile Queue Length [ft/ln]  | 223.87 | 327.52 | 174.70 | 1976.55 | 295.99 | 25.86 | 124.92 | 540.18 | 563.74 | 152.45 | 323.17 | 674.41 |

**Movement, Approach, & Intersection Results**

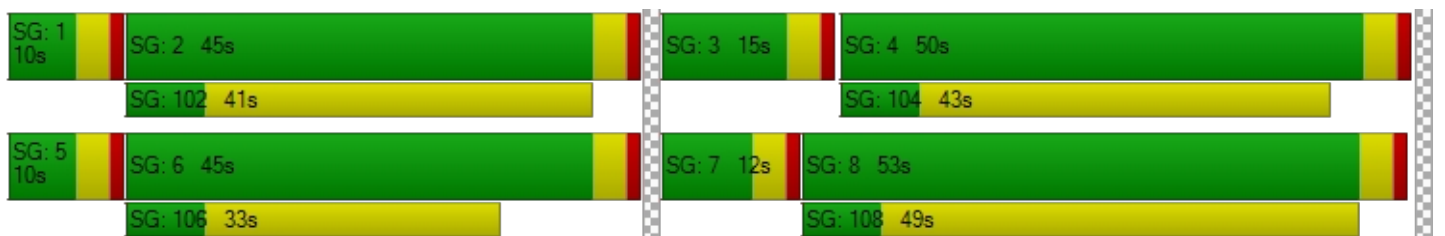
|                                 |        |       |       |         |       |       |       |       |       |       |       |       |
|---------------------------------|--------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 68.00  | 50.68 | 44.92 | 1554.19 | 53.15 | 43.86 | 74.67 | 20.86 | 22.46 | 86.19 | 15.59 | 26.03 |
| Movement LOS                    | E      | D     | D     | F       | D     | D     | E     | C     | C     | F     | B     | C     |
| d_A, Approach Delay [s/veh]     | 55.11  |       |       | 1054.04 |       |       | 22.80 |       |       | 23.86 |       |       |
| Approach LOS                    | E      |       |       | F       |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 237.19 |       |       |         |       |       |       |       |       |       |       |       |
| Intersection LOS                | F      |       |       |         |       |       |       |       |       |       |       |       |
| Intersection V/C                | 1.079  |       |       |         |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.885 | 3.029 | 3.202 | 3.486 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 816   | 766   | 683   | 683   |
| d_b, Bicycle Delay [s]                                   | 21.02 | 22.83 | 26.02 | 26.02 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.393 | 2.820 | 2.872 | 2.985 |
| Bicycle LOS  | B     | C     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



*APPENDIX D-VI*

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**

**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 40.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.898 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T T T    |      |      | T T T T T    |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name   | St Co |      |      | St Co |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 194   | 250  | 236  | 101   | 692  | 9    | 16           | 159  | 238  | 542          | 203  | 627  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 194   | 250  | 236  | 101   | 692  | 9    | 16           | 159  | 238  | 542          | 203  | 627  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 49    | 63   | 59   | 253   | 173  | 2    | 4            | 399  | 60   | 136          | 509  | 157  |
| Total Analysis Volume [veh/h]                                  | 194   | 250  | 236  | 101   | 692  | 9    | 16           | 159  | 238  | 542          | 203  | 627  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Ove  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 6    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      | 6,7  |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 6    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 30   |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 1.0  |
| Split [s]                    | 13   | 15   | 0    | 42   | 44   | 0    | 10   | 39   | 0    | 24   | 53   | 53   |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  |
| Walk [s]                     | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 7    |
| Pedestrian Clearance [s]     | 0    | 0    | 0    | 0    | 33   | 0    | 0    | 28   | 0    | 0    | 22   | 22   |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   | No   |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   | No   |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   | No   |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L   | C   | C   | R   | L    | C    | C    | L    | C    | C    | L    | C    | R    |
|---|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 12  | 12  | 12  | 12  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.0 | 4.0 | 4.0 | 4.0 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.0 | 2.0 | 2.0 | 2.0 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 |
| g_i, Effective Green Time [s]           | 9   | 12  | 12  | 12  | 37   | 40   | 40   | 3    | 35   | 35   | 20   | 52   | 94   |
| g / C, Green / Cycle                    | 0.0 | 0.1 | 0.1 | 0.1 | 0.31 | 0.34 | 0.34 | 0.02 | 0.29 | 0.29 | 0.17 | 0.44 | 0.78 |
| (v / s)_i Volume / Saturation Flow Rate | 0.0 | 0.0 | 0.0 | 0.0 | 0.29 | 0.18 | 0.18 | 0.00 | 0.24 | 0.24 | 0.15 | 0.36 | 0.33 |
| s, saturation flow rate [veh/h]         | 35  | 19  | 19  | 19  | 350  | 190  | 190  | 350  | 570  | 190  | 350  | 570  | 190  |
| c, Capacity [veh/h]                     | 25  | 18  | 18  | 18  | 108  | 641  | 641  | 76   | 165  | 552  | 584  | 248  | 148  |
| d1, Uniform Delay [s]                   | 54. | 53. | 53. | 52. | 40.2 | 32.3 | 32.3 | 57.7 | 39.7 | 39.8 | 49.3 | 29.6 | 4.39 |
| k, delay calibration                    | 0.1 | 0.1 | 0.1 | 0.1 | 0.11 | 0.13 | 0.13 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.9 | 16. | 10. | 7.3 | 4.41 | 0.86 | 0.85 | 1.37 | 4.88 | 13.8 | 7.03 | 3.15 | 0.89 |
| d3, Initial Queue Delay [s]             | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |     |     |     |     |      |      |      |      |      |      |      |      |      |
|---------------------------------------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.7 | 0.9 | 0.8 | 0.7 | 0.93 | 0.55 | 0.55 | 0.21 | 0.83 | 0.83 | 0.93 | 0.82 | 0.42 |
| d, Delay for Lane Group [s/veh]       | 59. | 70. | 63. | 60. | 44.6 | 33.2 | 33.1 | 59.1 | 44.6 | 53.7 | 56.3 | 32.8 | 5.28 |
| Lane Group LOS                        | E   | E   | E   | E   | D    | C    | C    | E    | D    | D    | E    | C    | A    |
| Critical Lane Group                   | No  | Ye  | No  | No  | Yes  | No   | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 3.0 | 6.0 | 5.3 | 4.8 | 14.9 | 8.42 | 8.40 | 0.25 | 13.2 | 14.7 | 8.55 | 17.4 | 4.54 |
| 50th-Percentile Queue Length [ft/ln]  | 76. | 15  | 13  | 12  | 374. | 210. | 210. | 6.34 | 330. | 369. | 213. | 437. | 113. |
| 95th-Percentile Queue Length [veh/ln] | 5.5 | 10. | 9.0 | 8.4 | 21.3 | 13.1 | 13.1 | 0.46 | 19.1 | 21.0 | 13.3 | 24.3 | 8.04 |
| 95th-Percentile Queue Length [ft/ln]  | 13  | 25  | 22  | 21  | 533. | 329. | 328. | 11.4 | 479. | 526. | 333. | 608. | 200. |

**Movement, Approach, & Intersection Results**

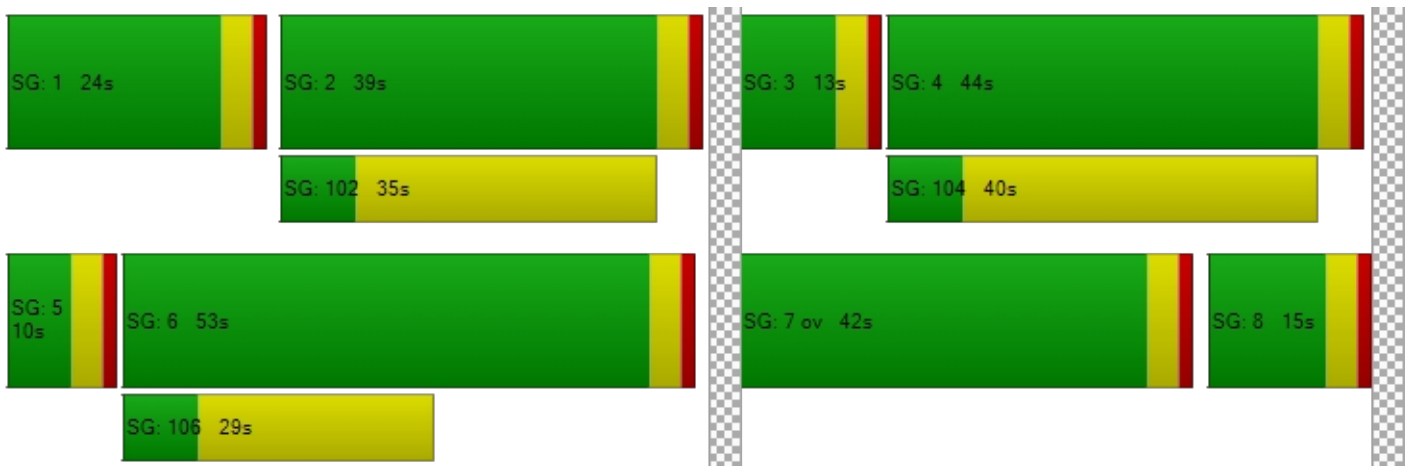
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 59.7  | 68.0 | 61.2 | 44.6  | 33.2 | 33.1 | 59.1  | 45.9 | 53.7 | 56.3  | 32.8 | 5.28 |
| Movement LOS                    | E     | E    | E    | D     | C    | C    | E     | D    | D    | E     | C    | A    |
| d_A, Approach Delay [s/veh]     | 63.32 |      |      | 39.97 |      |      | 47.04 |      |      | 31.42 |      |      |
| Approach LOS                    | E     |      |      | D     |      |      | D     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 40.18 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.898 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.907 | 2.890 | 3.306 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 183   | 666   | 583   | 816   |
| d_b, Bicycle Delay [s]                                     | 49.52 | 26.68 | 30.12 | 21.02 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.121 | 2.972 | 2.322 | 3.322 |
| Bicycle LOS  | B     | C     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 24.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.841 |

**Intersection Setup**

| Name                         | SR-57    |      |      | SR-57 |      |      | Lambert Road |            |           | Lambert Road |      |           |      |  |  |
|------------------------------|----------|------|------|-------|------|------|--------------|------------|-----------|--------------|------|-----------|------|--|--|
|                              | Approach |      |      |       |      |      | Northbound   | Southbound | Eastbound |              |      | Westbound |      |  |  |
| Lane Configuration           |          |      |      |       |      |      | ⇐⇐⇐⇐         |            |           | ⇐⇐⇐⇐         |      |           | ⇐⇐⇐⇐ |  |  |
| Turning Movement             | Left     | Thru | Righ | Left  | Thru | Righ | Left         | Thru       | Righ      | Left         | Thru | Righ      |      |  |  |
| Lane Width [ft]              | 12.0     | 12.0 | 12.0 | 12.0  | 12.0 | 12.0 | 12.0         | 12.0       | 12.0      | 12.0         | 12.0 | 12.0      |      |  |  |
| No. of Lanes in Entry Pocket | 0        | 0    | 0    | 1     | 0    | 1    | 0            | 0          | 1         | 1            | 0    | 0         |      |  |  |
| Entry Pocket Length [ft]     | 100.     | 100. | 100. | 100.  | 100. | 100. | 100.         | 100.       | 100.      | 100.         | 100. | 100.      |      |  |  |
| No. of Lanes in Exit Pocket  | 0        | 0    | 0    | 0     | 0    | 0    | 0            | 0          | 0         | 0            | 0    | 0         |      |  |  |
| Exit Pocket Length [ft]      | 0.00     | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 | 0.00         | 0.00       | 0.00      | 0.00         | 0.00 | 0.00      |      |  |  |
| Speed [mph]                  | 30.00    |      |      | 30.00 |      |      | 30.00        |            |           | 30.00        |      |           |      |  |  |
| Grade [%]                    | 0.00     |      |      | 0.00  |      |      | 0.00         |            |           | 0.00         |      |           |      |  |  |
| Curb Present                 |          |      |      | No    |      |      | No           |            |           | No           |      |           |      |  |  |
| Crosswalk                    | Yes      |      |      | Yes   |      |      | No           |            |           | No           |      |           |      |  |  |

**Volumes**

| Name   | SR-57 |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 0     | 0    | 0    | 108   | 0    | 730  | 0            | 195  | 650  | 289          | 228  | 0    |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 0     | 0    | 0    | 108   | 0    | 730  | 0            | 195  | 650  | 289          | 228  | 0    |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 0     | 0    | 0    | 271   | 0    | 183  | 0            | 489  | 163  | 72           | 572  | 0    |
| Total Analysis Volume [veh/h]                                  | 0     | 0    | 0    | 108   | 0    | 730  | 0            | 195  | 650  | 289          | 228  | 0    |
| Presence of On-Street Parking                                  |       |      |      | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Split | Per  | Split | Per  | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|-------|------|-------|------|------|------|------|------|------|
| Signal Group                 | 0    | 0    | 0    | 7     | 0    | 0     | 0    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |       |      |       |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | Lea   | -    | -     | -    | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 0    | 0    | 6     | 0    | 0     | 0    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 0    | 0    | 30    | 0    | 0     | 0    | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 0.0  | 0.0  | 1.0   | 0.0  | 0.0   | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 0    | 0    | 47    | 0    | 0     | 0    | 34   | 0    | 14   | 48   | 0    |
| Vehicle Extension [s]        | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 12   | 0    | 0    | 20   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      |      |      | No    |      |       |      | No   |      | No   | No   |      |
| Maximum Recall               |      |      |      | No    |      |       |      | No   |      | No   | No   |      |
| Pedestrian Recall            |      |      |      | No    |      |       |      | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              |  | L     | R     | C     | R     | L     | C     |
|---|--|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     |  | 95    | 95    | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           |  | 35    | 35    | 39    | 39    | 10    | 52    |
| g / C, Green / Cycle                    |  | 0.37  | 0.37  | 0.41  | 0.41  | 0.10  | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.31  | 0.19  | 0.34  | 0.17  | 0.08  | 0.40  |
| s, saturation flow rate [veh/h]         |  | 3500  | 3800  | 5700  | 3800  | 3500  | 5700  |
| c, Capacity [veh/h]                     |  | 1280  | 1389  | 2311  | 1541  | 359   | 3136  |
| d1, Uniform Delay [s]                   |  | 27.70 | 23.67 | 25.56 | 20.26 | 41.70 | 16.05 |
| k, delay calibration                    |  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  |
| l, Upstream Filtering Factor            |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               |  | 1.64  | 0.31  | 4.03  | 0.85  | 4.23  | 1.53  |
| d3, Initial Queue Delay [s]             |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |  |        |        |        |        |        |        |
|---------------------------------------|--|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  |  | 0.85   | 0.53   | 0.85   | 0.42   | 0.80   | 0.73   |
| d, Delay for Lane Group [s/veh]       |  | 29.35  | 23.98  | 29.59  | 21.11  | 45.93  | 17.58  |
| Lane Group LOS                        |  | C      | C      | C      | C      | D      | B      |
| Critical Lane Group                   |  | Yes    | No     | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] |  | 11.18  | 6.32   | 13.55  | 5.20   | 3.49   | 11.88  |
| 50th-Percentile Queue Length [ft/ln]  |  | 279.39 | 158.05 | 338.71 | 130.00 | 87.21  | 297.09 |
| 95th-Percentile Queue Length [veh/ln] |  | 16.66  | 10.45  | 19.58  | 8.94   | 6.28   | 17.54  |
| 95th-Percentile Queue Length [ft/ln]  |  | 416.45 | 261.14 | 489.62 | 223.50 | 156.98 | 438.42 |

**Movement, Approach, & Intersection Results**

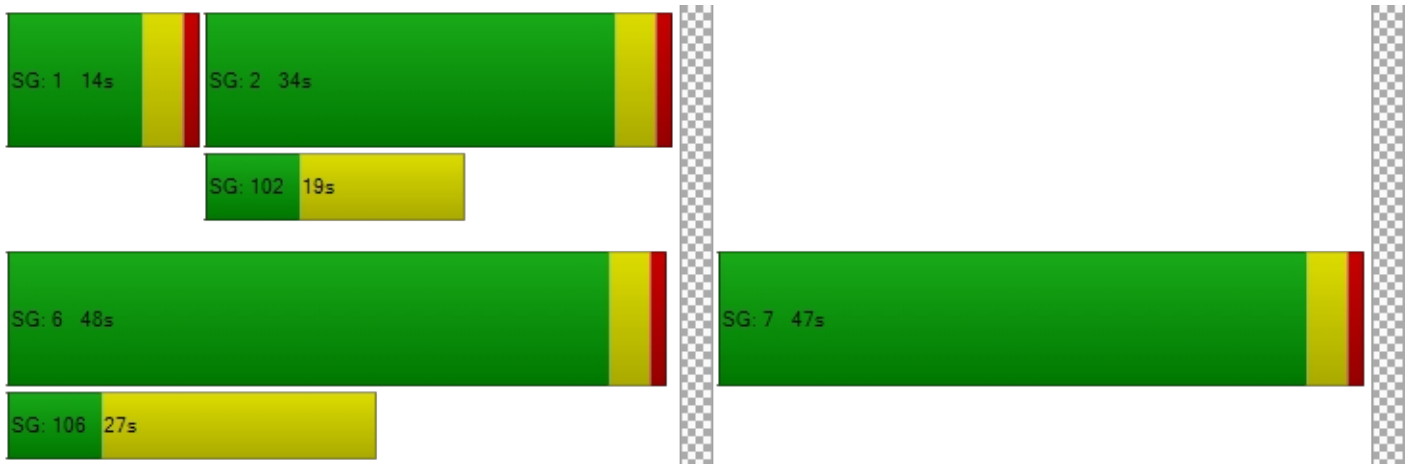
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 29.3  | 0.00 | 23.9 | 0.00  | 29.5 | 21.1 | 45.9  | 17.5 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C    |       | C    | C    | D     | B    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 27.19 |      |      | 27.48 |      |      | 20.76 |      |      |
| Approach LOS                    | A     |      |      | C     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 24.93 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.841 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 37.14 | 37.14 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.175 | 2.576 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 0     | 905   | 631   | 926   |
| d_b, Bicycle Delay [s]                                     | 47.51 | 14.24 | 22.24 | 13.69 |
| I_b,int, Bicycle LOS Score for Intersection                | 4.132 | 1.560 | 2.992 | 2.976 |
| Bicycle LOS  | D     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 22.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.844 |

**Intersection Setup**

| Name                         | SR-57      |      |      | SR-57      |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | ⇐⇐⇐        |      |      |            |      |      | ⇐⇐⇐          |      |      | ⇐⇐⇐          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 0          | 0    | 0    | 1            | 0    | 1    | 0            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      |            |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | No         |      |      | No           |      |      | No           |      |      |

**Volumes**

| Name   | SR-57 |      |      | SR-57 |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 110   | 0    | 534  | 0     | 0    | 0    | 0            | 260  | 424  | 0            | 147  | 573  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 110   | 0    | 534  | 0     | 0    | 0    | 0            | 260  | 424  | 0            | 147  | 573  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 0.00 |
| Total 15-Minute Volume [veh/h]                                 | 276   | 0    | 134  | 0     | 0    | 0    | 0            | 651  | 106  | 0            | 368  | 0    |
| Total Analysis Volume [veh/h]                                  | 110   | 0    | 534  | 0     | 0    | 0    | 0            | 260  | 424  | 0            | 147  | 0    |
| Presence of On-Street Parking                                  | No    |      | No   |       |      |      | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Split | Per  | Split | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Unsi |
|------------------------------|-------|------|-------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3     | 0    | 0     | 0    | 0    | 0    | 0    | 2    | 0    | 0    | 6    | 0    |      |
| Auxiliary Signal Groups      |       |      |       |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea   | -    | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    |      |
| Minimum Green [s]            | 6     | 0    | 0     | 0    | 0    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |      |
| Maximum Green [s]            | 30    | 0    | 0     | 0    | 0    | 0    | 0    | 30   | 0    | 0    | 30   | 0    |      |
| Amber [s]                    | 3.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |      |
| All red [s]                  | 1.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |      |
| Split [s]                    | 59    | 0    | 0     | 0    | 0    | 0    | 0    | 36   | 0    | 0    | 36   | 0    |      |
| Vehicle Extension [s]        | 3.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |      |
| Walk [s]                     | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 0    | 0    |      |
| Pedestrian Clearance [s]     | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 25   | 0    | 0    | 0    | 0    |      |
| Delayed Vehicle Green [s]    | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |      |
| Rest In Walk                 | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |      |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |      |
| Minimum Recall               | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| Maximum Recall               | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| Pedestrian Recall            | No    |      |       |      |      |      |      | No   |      |      | No   |      |      |
| Detector Location [ft]       | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |      |
| Detector Length [ft]         | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |      |
| I, Upstream Filtering Factor | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |      |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | R     |  | C    | C    | R    | C     |
|---|-------|-------|--|------|------|------|-------|
| C, Cycle Length [s]                     | 95    | 95    |  | 95   | 95   | 95   | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00 | 4.00 | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00 | 2.00 | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           | 35    | 35    |  | 52   | 52   | 52   | 52    |
| g / C, Green / Cycle                    | 0.37  | 0.37  |  | 0.54 | 0.54 | 0.54 | 0.54  |
| (v / s)_i Volume / Saturation Flow Rate | 0.32  | 0.28  |  | 0.46 | 0.46 | 0.22 | 0.26  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 380  | 190  | 190  | 5700  |
| c, Capacity [veh/h]                     | 1305  | 708   |  | 206  | 103  | 103  | 3094  |
| d1, Uniform Delay [s]                   | 27.26 | 25.96 |  | 18.2 | 18.2 | 12.7 | 13.37 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.50 | 0.50 | 0.50 | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00  |
| d2, Incremental Delay [s]               | 1.60  | 1.66  |  | 4.38 | 8.32 | 1.21 | 0.53  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00  |

**Lane Group Results**

|                                       |        |        |  |      |      |      |        |
|---------------------------------------|--------|--------|--|------|------|------|--------|
| X, volume / capacity                  | 0.85   | 0.75   |  | 0.84 | 0.84 | 0.41 | 0.48   |
| d, Delay for Lane Group [s/veh]       | 28.86  | 27.62  |  | 22.6 | 26.5 | 13.9 | 13.89  |
| Lane Group LOS                        | C      | C      |  | C    | C    | B    | B      |
| Critical Lane Group                   | Yes    | No     |  | Yes  | No   | No   | No     |
| 50th-Percentile Queue Length [veh/ln] | 11.30  | 10.46  |  | 15.9 | 17.0 | 5.36 | 6.22   |
| 50th-Percentile Queue Length [ft/ln]  | 282.38 | 261.57 |  | 398. | 426. | 133. | 155.59 |
| 95th-Percentile Queue Length [veh/ln] | 16.81  | 15.77  |  | 22.4 | 23.8 | 9.15 | 10.31  |
| 95th-Percentile Queue Length [ft/ln]  | 420.17 | 394.20 |  | 562. | 595. | 228. | 257.87 |

**Movement, Approach, & Intersection Results**

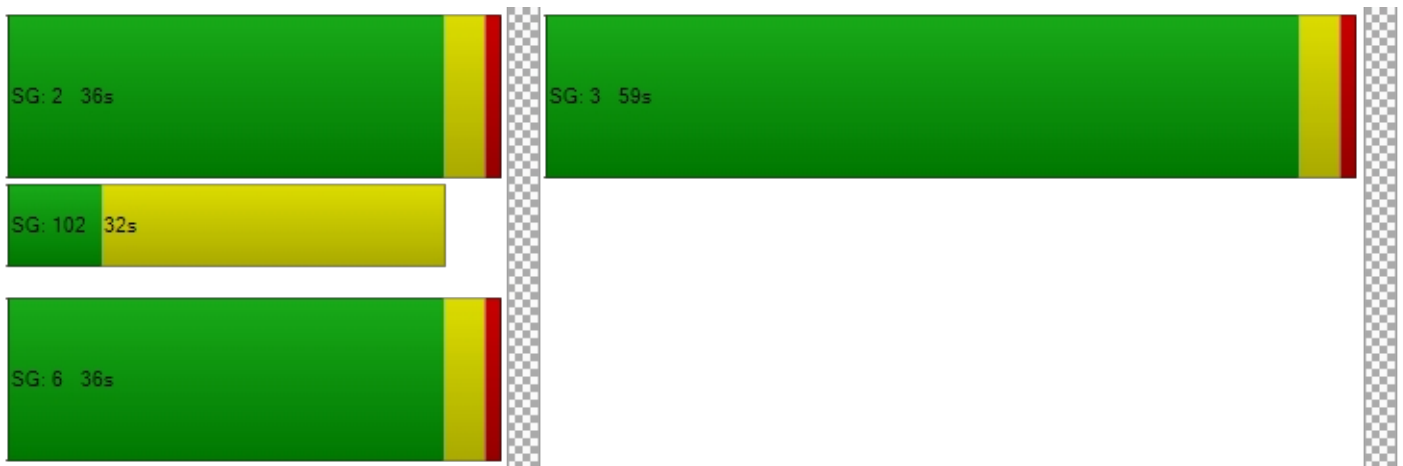
|                                 |       |      |      |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 28.8  | 0.00 | 27.6 | 0.00 | 0.00  | 0.00 | 0.00  | 23.5 | 13.9 | 0.00 | 13.8 | 0.00 |
| Movement LOS                    | C     |      | C    |      |       |      |       | C    | B    |      | B    |      |
| d_A, Approach Delay [s/veh]     | 28.46 |      | 0.00 |      | 22.55 |      | 13.89 |      |      |      |      |      |
| Approach LOS                    | C     |      | A    |      | C     |      | B     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 22.05 |      |      |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | C     |      |      |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.844 |      |      |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 0.0   | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 37.11 | 0.00  | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.704 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | F     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1159  | 0     | 674   | 674   |
| d_b, Bicycle Delay [s]                                     | 8.40  | 47.47 | 20.87 | 20.87 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.560 | 4.132 | 3.226 | 2.369 |
| Bicycle LOS  | A     | D     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 14.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.672 |

**Intersection Setup**

| Name                         | Pointe Drive |      |      | Pointe Drive |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound   |      |      | Southbound   |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound   |      |      | Southbound   |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | +            |      |      | +rrr         |      |      | rrrr         |      |      | rrrr         |      |      |
| Turning Movement             | Left         | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0            | 0    | 0    | 0            | 0    | 1    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.         | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00        |      |      | 30.00        |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00         |      |      | 0.00         |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No           |      |      | No           |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes          |      |      | Yes          |      |      | No           |      |      | Yes          |      |      |

**Volumes**

| Name   | Pointe Drive |      |      | Pointe Drive |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|--------------|------|------|--------------|------|------|--------------|------|------|--------------|------|------|
|  | 9            | 8    | 7    | 69           | 1    | 137  | 585          | 261  | 42   | 18           | 203  | 192  |
| Base Volume Input [veh/h]                                      | 9            | 8    | 7    | 69           | 1    | 137  | 585          | 261  | 42   | 18           | 203  | 192  |
| Base Volume Adjustment Factor                                  | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 9            | 8    | 7    | 69           | 1    | 137  | 585          | 261  | 42   | 18           | 203  | 192  |
| Peak Hour Factor   | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 2            | 2    | 2    | 17           | 0    | 34   | 146          | 653  | 11   | 5            | 510  | 48   |
| Total Analysis Volume [veh/h]                                  | 9            | 8    | 7    | 69           | 1    | 137  | 585          | 261  | 42   | 18           | 203  | 192  |
| Presence of On-Street Parking                                  | No           |      | No   | No           |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0            |      |      | 0            |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 44   | 0    | 0    | 44   | 0    | 40   | 37   | 0    | 34   | 31   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 33   | 0    | 0    | 0    | 0    | 0    | 14   | 0    | 0    | 20   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115  | 115  | 115  | 115  | 115  | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 7     | 7     | 7     | 22   | 94   | 94   | 3    | 74   | 74   |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.06  | 0.19 | 0.81 | 0.81 | 0.02 | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.04  | 0.04  | 0.17 | 0.46 | 0.48 | 0.01 | 0.39 | 0.40 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 350  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 150   | 169   | 225   | 676  | 309  | 154  | 42   | 244  | 122  |
| d1, Uniform Delay [s]                   | 51.56 | 52.93 | 52.78 | 44.9 | 3.70 | 3.87 | 55.4 | 11.9 | 12.1 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.49  | 1.62  | 2.64  | 3.49 | 0.75 | 1.67 | 6.83 | 1.12 | 2.33 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.16  | 0.41  | 0.61  | 0.87 | 0.56 | 0.59 | 0.43 | 0.60 | 0.62 |
| d, Delay for Lane Group [s/veh]       | 52.06 | 54.55 | 55.42 | 48.4 | 4.45 | 5.54 | 62.2 | 13.1 | 14.4 |
| Lane Group LOS                        | D     | D     | E     | D    | A    | A    | E    | B    | B    |
| Critical Lane Group                   | No    | Yes   | No    | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 0.68  | 2.05  | 2.01  | 8.36 | 5.26 | 6.13 | 0.59 | 10.6 | 11.4 |
| 50th-Percentile Queue Length [ft/ln]  | 17.04 | 51.37 | 50.33 | 209. | 131. | 153. | 14.8 | 267. | 284. |
| 95th-Percentile Queue Length [veh/ln] | 1.23  | 3.70  | 3.62  | 13.1 | 9.02 | 10.1 | 1.07 | 16.0 | 16.9 |
| 95th-Percentile Queue Length [ft/ln]  | 30.66 | 92.46 | 90.59 | 327. | 225. | 254. | 26.7 | 401. | 423. |

**Movement, Approach, & Intersection Results**

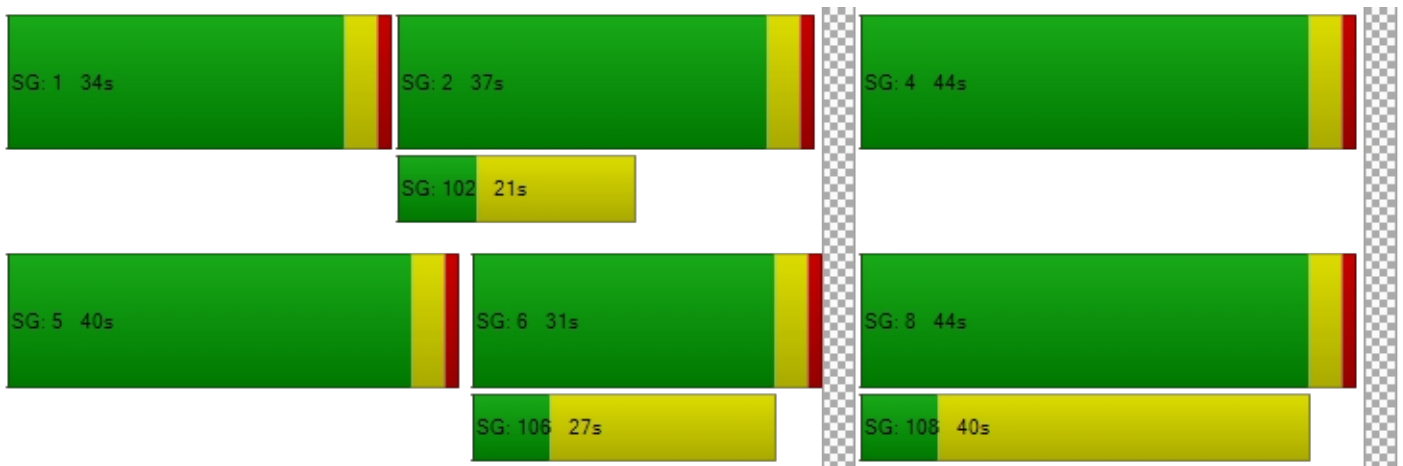
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 52.0  | 52.0 | 52.0 | 54.5  | 54.5 | 55.4 | 48.4  | 4.82 | 5.54 | 62.2  | 13.4 | 14.4 |
| Movement LOS                    | D     | D    | D    | D     | D    | E    | D     | A    | A    | E     | B    | B    |
| d_A, Approach Delay [s/veh]     | 52.06 |      |      | 55.12 |      |      | 12.70 |      |      | 13.95 |      |      |
| Approach LOS                    | D     |      |      | E     |      |      | B     |      |      | B     |      |      |
| d_I, Intersection Delay [s/veh] | 14.89 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | B     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.672 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 47.02 | 47.02 | 0.00  | 47.02 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.768 | 2.505 | 0.000 | 3.391 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 696   | 696   | 574   | 470   |
| d_b, Bicycle Delay [s]                                     | 24.45 | 24.45 | 29.23 | 33.66 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.599 | 1.901 | 3.341 | 2.797 |
| Bicycle LOS  | A     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 38.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.885 |

**Intersection Setup**

| Name                         | N As       |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound  |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound  |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T       |      |      | T T T T T T  |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left        | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0        | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1           | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.        | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00        | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00       |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00        |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No          |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes         |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | N As |      |      | Wildcat Way |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------|------|------|-------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]                                      | 169  | 322  | 11   | 125         | 218  | 405  | 500          | 208  | 173  | 23           | 159  | 183  |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00        | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 169  | 322  | 11   | 125         | 218  | 405  | 500          | 208  | 173  | 23           | 159  | 183  |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00        | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 42   | 81   | 3    | 31          | 55   | 101  | 125          | 520  | 43   | 6            | 399  | 46   |
| Total Analysis Volume [veh/h]                                  | 169  | 322  | 11   | 125         | 218  | 405  | 500          | 208  | 173  | 23           | 159  | 183  |
| Presence of On-Street Parking                                  | No   |      | No   | No          |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0           | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0           |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 16   | 27   | 0    | 24   | 35   | 0    | 22   | 51   | 0    | 13   | 42   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 16   | 0    | 0    | 19   | 0    | 0    | 20   | 0    | 0    | 20   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L    | C    | R    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 12   | 29   | 29   | 10   | 27   | 27   | 18   | 57   | 57   | 3    | 42   | 42   |
| g / C, Green / Cycle                    | 0.10 | 0.25 | 0.25 | 0.09 | 0.23 | 0.23 | 0.16 | 0.50 | 0.50 | 0.03 | 0.37 | 0.37 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.09 | 0.09 | 0.07 | 0.11 | 0.21 | 0.14 | 0.36 | 0.09 | 0.01 | 0.31 | 0.31 |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 350  | 570  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 189  | 478  | 478  | 155  | 442  | 442  | 549  | 282  | 941  | 51   | 139  | 696  |
| d1, Uniform Delay [s]                   | 50.8 | 35.3 | 35.3 | 51.6 | 38.2 | 43.0 | 47.7 | 23.0 | 16.1 | 55.0 | 33.5 | 33.5 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.30 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 13.6 | 0.44 | 0.43 | 9.45 | 0.85 | 18.1 | 6.27 | 1.76 | 0.43 | 6.23 | 6.70 | 12.3 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.90 | 0.35 | 0.35 | 0.81 | 0.49 | 0.92 | 0.91 | 0.74 | 0.18 | 0.45 | 0.85 | 0.85 |
| d, Delay for Lane Group [s/veh]       | 64.5 | 35.7 | 35.7 | 61.0 | 39.1 | 61.1 | 54.0 | 24.8 | 16.5 | 61.2 | 40.2 | 45.9 |
| Lane Group LOS                        | E    | D    | D    | E    | D    | E    | D    | C    | B    | E    | D    | D    |
| Critical Lane Group                   | Yes  | No   | No   | No   | No   | Yes  | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 5.51 | 3.91 | 3.88 | 3.94 | 5.43 | 13.3 | 7.50 | 14.9 | 2.63 | 0.74 | 16.2 | 17.3 |
| 50th-Percentile Queue Length [ft/ln]  | 137. | 97.8 | 96.8 | 98.5 | 135. | 333. | 187. | 372. | 65.7 | 18.6 | 406. | 432. |
| 95th-Percentile Queue Length [veh/ln] | 9.37 | 7.04 | 6.98 | 7.10 | 9.25 | 19.3 | 11.9 | 21.2 | 4.74 | 1.34 | 22.8 | 24.1 |
| 95th-Percentile Queue Length [ft/ln]  | 234. | 176. | 174. | 177. | 231. | 483. | 299. | 530. | 118. | 33.5 | 571. | 603. |

**Movement, Approach, & Intersection Results**

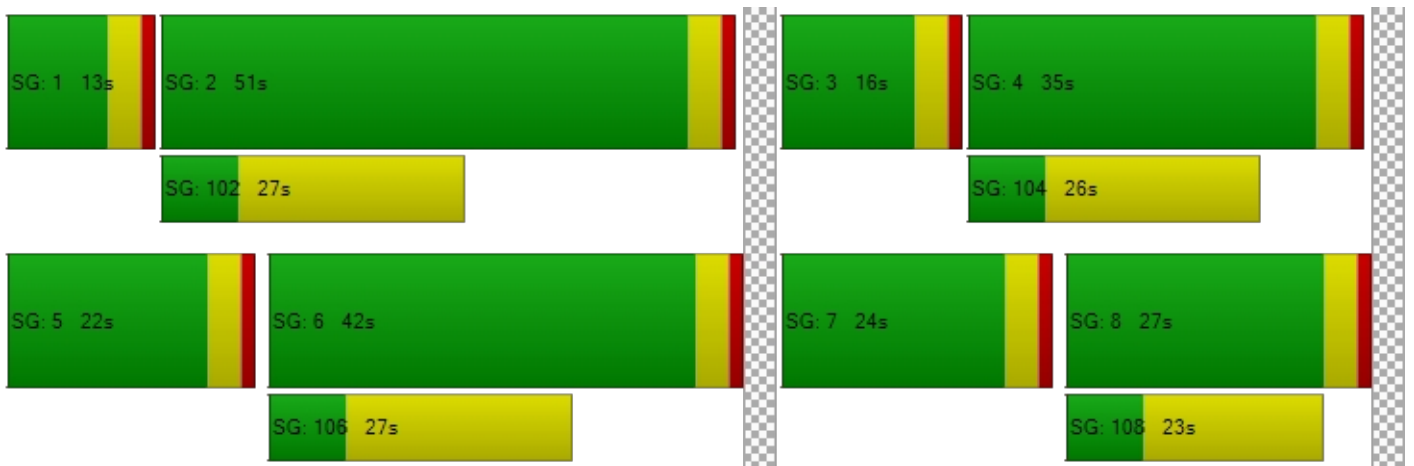
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 64.5  | 35.7 | 35.7 | 61.0  | 39.1 | 61.1 | 54.0  | 24.8 | 16.5 | 61.2  | 41.7 | 45.9 |
| Movement LOS                    | E     | D    | D    | E     | D    | E    | D     | C    | B    | E     | D    | D    |
| d_A, Approach Delay [s/veh]     | 45.45 |      |      | 54.72 |      |      | 29.62 |      |      | 42.37 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 38.18 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.885 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.490 | 2.653 | 3.394 | 3.165 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 400   | 539   | 817   | 661   |
| d_b, Bicycle Delay [s]                                     | 36.82 | 30.70 | 20.12 | 25.80 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.974 | 2.177 | 3.074 | 2.550 |
| Bicycle LOS  | A     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 30.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.777 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Approach                     | Northbound |      |      | Southbound    |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T             |      |      | T T T        |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left          | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0          | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1             | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.          | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00          | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00         |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00          |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No            |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes           |      |      | Yes          |      |      | Yes          |      |      |



**Volumes**

| Name   | Kr Bo |      |      | Santa Fe Road |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|-------|------|------|---------------|------|------|--------------|------|------|--------------|------|------|
| Base Volume Input [veh/h]                                      | 329   | 130  | 57   | 22            | 236  | 373  | 111          | 823  | 124  | 330          | 986  | 14   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 329   | 130  | 57   | 22            | 236  | 373  | 111          | 823  | 124  | 330          | 986  | 14   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 82    | 33   | 14   | 6             | 59   | 93   | 28           | 206  | 311  | 83           | 247  | 4    |
| Total Analysis Volume [veh/h]                                  | 329   | 130  | 57   | 22            | 236  | 373  | 111          | 823  | 124  | 330          | 986  | 14   |
| Presence of On-Street Parking                                  | No    |      | No   | No            |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0             | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0             |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Ove  | Prot | Per  | Per  | Prot | Per  | Ove  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 8    | 7    | 4    | 0    | 5    | 2    | 2    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      | 1,8  |      |      |      |      |      | 2,3  |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 6    | 6    | 6    | 0    | 6    | 6    | 6    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 30   | 30   | 30   | 0    | 30   | 30   | 30   | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 1.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 17   | 51   | 51   | 10   | 44   | 0    | 22   | 37   | 37   | 17   | 32   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 3.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 7    | 0    | 7    | 0    | 0    | 7    | 7    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 30   | 30   | 0    | 31   | 0    | 0    | 26   | 26   | 0    | 21   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   | No   | No   | No   |      | No   | No   | No   | No   | No   |      |
| Maximum Recall               | No   | No   | No   | No   | No   |      | No   | No   | No   | No   | No   |      |
| Pedestrian Recall            | No   | No   | No   | No   | No   |      | No   | No   | No   | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | R    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  | 115  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 13   | 35   | 52   | 3    | 25   | 25   | 9    | 48   | 65   | 13   | 52   | 52   |
| g / C, Green / Cycle                    | 0.11 | 0.31 | 0.45 | 0.03 | 0.22 | 0.22 | 0.08 | 0.42 | 0.56 | 0.11 | 0.45 | 0.45 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.07 | 0.03 | 0.01 | 0.12 | 0.20 | 0.06 | 0.22 | 0.33 | 0.09 | 0.17 | 0.18 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 180  | 190  | 190  | 180  | 380  | 380  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 397  | 584  | 861  | 49   | 420  | 420  | 140  | 157  | 214  | 389  | 170  | 853  |
| d1, Uniform Delay [s]                   | 49.9 | 29.6 | 17.7 | 55.1 | 39.8 | 43.4 | 52.1 | 25.1 | 16.2 | 50.2 | 21.1 | 21.3 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.14 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.45 | 0.19 | 0.03 | 6.24 | 1.18 | 8.11 | 9.78 | 1.24 | 1.16 | 5.24 | 0.66 | 1.41 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.83 | 0.22 | 0.07 | 0.45 | 0.56 | 0.89 | 0.80 | 0.52 | 0.58 | 0.85 | 0.39 | 0.40 |
| d, Delay for Lane Group [s/veh]       | 54.3 | 29.8 | 17.7 | 61.3 | 41.0 | 51.5 | 61.9 | 26.3 | 17.4 | 55.4 | 21.8 | 22.7 |
| Lane Group LOS                        | D    | C    | B    | E    | D    | D    | E    | C    | B    | E    | C    | C    |
| Critical Lane Group                   | Yes  | No   | No   | No   | No   | Yes  | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 4.87 | 2.72 | 0.87 | 0.71 | 6.07 | 11.1 | 3.53 | 8.56 | 10.5 | 4.93 | 6.00 | 6.49 |
| 50th-Percentile Queue Length [ft/ln]  | 121. | 67.9 | 21.6 | 17.8 | 151. | 279. | 88.1 | 213. | 263. | 123. | 150. | 162. |
| 95th-Percentile Queue Length [veh/ln] | 8.48 | 4.89 | 1.56 | 1.28 | 10.1 | 16.6 | 6.35 | 13.3 | 15.8 | 8.58 | 10.0 | 10.6 |
| 95th-Percentile Queue Length [ft/ln]  | 212. | 122. | 38.9 | 32.1 | 252. | 416. | 158. | 333. | 396. | 214. | 250. | 266. |

**Movement, Approach, & Intersection Results**

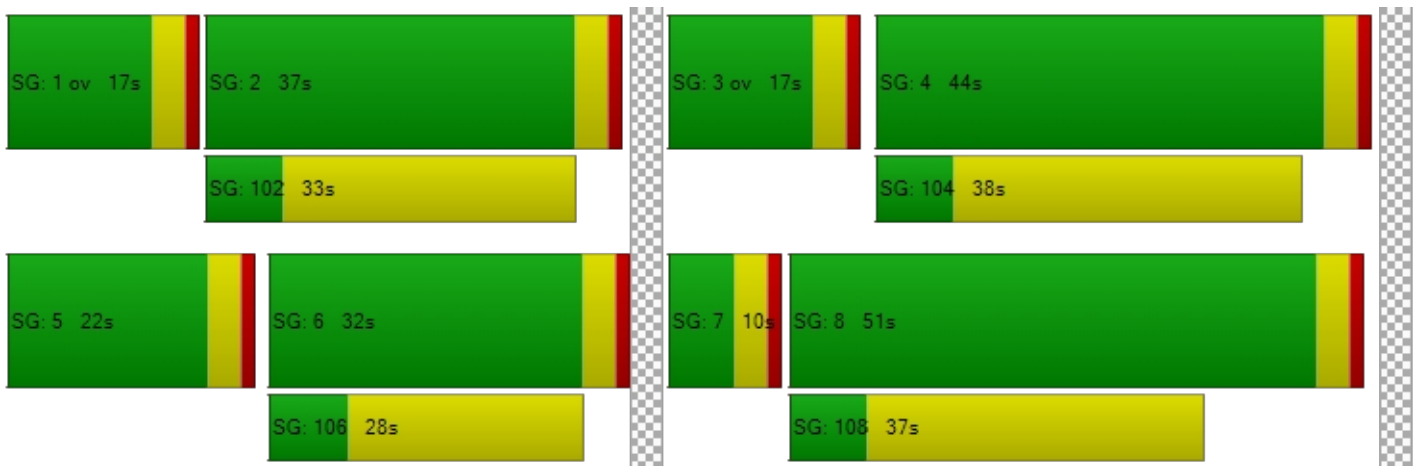
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 54.3  | 29.8 | 17.7 | 61.3  | 41.0 | 51.5 | 61.9  | 26.3 | 17.4 | 55.4  | 22.1 | 22.7 |
| Movement LOS                    | D     | C    | B    | E     | D    | D    | E     | C    | B    | E     | C    | C    |
| d_A, Approach Delay [s/veh]     | 44.14 |      |      | 47.96 |      |      | 23.08 |      |      | 30.40 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 30.88 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.777 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.842 | 2.359 | 3.208 | 2.917 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 817   | 695   | 574   | 487   |
| d_b, Bicycle Delay [s]                                     | 20.12 | 24.47 | 29.25 | 32.93 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.411 | 2.601 | 3.356 | 2.291 |
| Bicycle LOS  | B     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 6.9   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.329 |

**Intersection Setup**

| Name                         | Sunflower Street |      |       | Sunflower Street |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------------|------|-------|------------------|------|-------|--------------|------|-------|--------------|------|-------|
| Approach                     | Northbound       |      |       | Southbound       |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |                  |      |       |                  |      |       |              |      |       |              |      |       |
| Turning Movement             | Left             | Thru | Right | Left             | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0             | 12.0 | 12.0  | 12.0             | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1                | 0    | 0     | 0                | 0    | 1     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.             | 100. | 100.  | 100.             | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0                | 0    | 0     | 0                | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00             | 0.00 | 0.00  | 0.00             | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00            |      |       | 30.00            |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00             |      |       | 0.00             |      |       | 0.00         |      |       | 0.00         |      |       |
| Curb Present                 | No               |      |       | No               |      |       | No           |      |       | No           |      |       |
| Crosswalk                    | Yes              |      |       | Yes              |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name   | Sunflower Street |      |      | Sunflower Street |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------------------|------|------|------------------|------|------|--------------|------|------|--------------|------|------|
|  |                  |      |      |                  |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 48               | 6    | 19   | 5                | 0    | 6    | 7            | 896  | 51   | 26           | 131  | 2    |
| Base Volume Adjustment Factor                                  | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00             | 2.00 | 2.00 | 2.00             | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 48               | 6    | 19   | 5                | 0    | 6    | 7            | 896  | 51   | 26           | 131  | 2    |
| Peak Hour Factor   | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00             | 1.00 | 1.00 | 1.00             | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 12               | 2    | 5    | 1                | 0    | 2    | 2            | 224  | 13   | 7            | 328  | 1    |
| Total Analysis Volume [veh/h]                                  | 48               | 6    | 19   | 5                | 0    | 6    | 7            | 896  | 51   | 26           | 131  | 2    |
| Presence of On-Street Parking                                  | No               |      | No   | No               |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0                | 0    | 0    | 0                | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0                |      |      | 0                |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 7    | 0    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 6    | 0    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 30   | 0    | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 40   | 0    | 40   | 0    | 0    | 11   | 30   | 0    | 10   | 29   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 7    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 29   | 0    | 29   | 0    | 0    | 0    | 18   | 0    | 0    | 16   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      | No   |      |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      | No   |      |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      | No   |      |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 2     | 2     | 1    | 93   | 93   | 4    | 95   | 95   |
| g / C, Green / Cycle                    | 0.05  | 0.05  | 0.02  | 0.02  | 0.01 | 0.78 | 0.78 | 0.03 | 0.79 | 0.79 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03  | 0.01  | 0.00  | 0.00  | 0.00 | 0.25 | 0.25 | 0.01 | 0.23 | 0.24 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 180  | 190  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 83    | 87    | 28    | 30    | 20   | 147  | 147  | 53   | 301  | 150  |
| d1, Uniform Delay [s]                   | 56.12 | 55.35 | 58.29 | 58.31 | 58.9 | 4.04 | 4.02 | 57.3 | 3.30 | 3.34 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 6.26  | 1.77  | 2.88  | 3.19  | 10.6 | 0.59 | 0.57 | 6.86 | 0.24 | 0.51 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.58  | 0.29  | 0.18  | 0.20  | 0.36 | 0.32 | 0.32 | 0.49 | 0.29 | 0.30 |
| d, Delay for Lane Group [s/veh]       | 62.38 | 57.12 | 61.18 | 61.51 | 69.5 | 4.63 | 4.59 | 64.2 | 3.53 | 3.86 |
| Lane Group LOS                        | E     | E     | E     | E     | E    | A    | A    | E    | A    | A    |
| Critical Lane Group                   | Yes   | No    | No    | Yes   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 1.57  | 0.78  | 0.17  | 0.21  | 0.27 | 3.17 | 3.09 | 0.88 | 2.31 | 2.57 |
| 50th-Percentile Queue Length [ft/ln]  | 39.26 | 19.40 | 4.32  | 5.17  | 6.73 | 79.1 | 77.1 | 21.9 | 57.7 | 64.2 |
| 95th-Percentile Queue Length [veh/ln] | 2.83  | 1.40  | 0.31  | 0.37  | 0.48 | 5.70 | 5.55 | 1.58 | 4.16 | 4.62 |
| 95th-Percentile Queue Length [ft/ln]  | 70.68 | 34.91 | 7.78  | 9.31  | 12.1 | 142. | 138. | 39.5 | 103. | 115. |



**Movement, Approach, & Intersection Results**

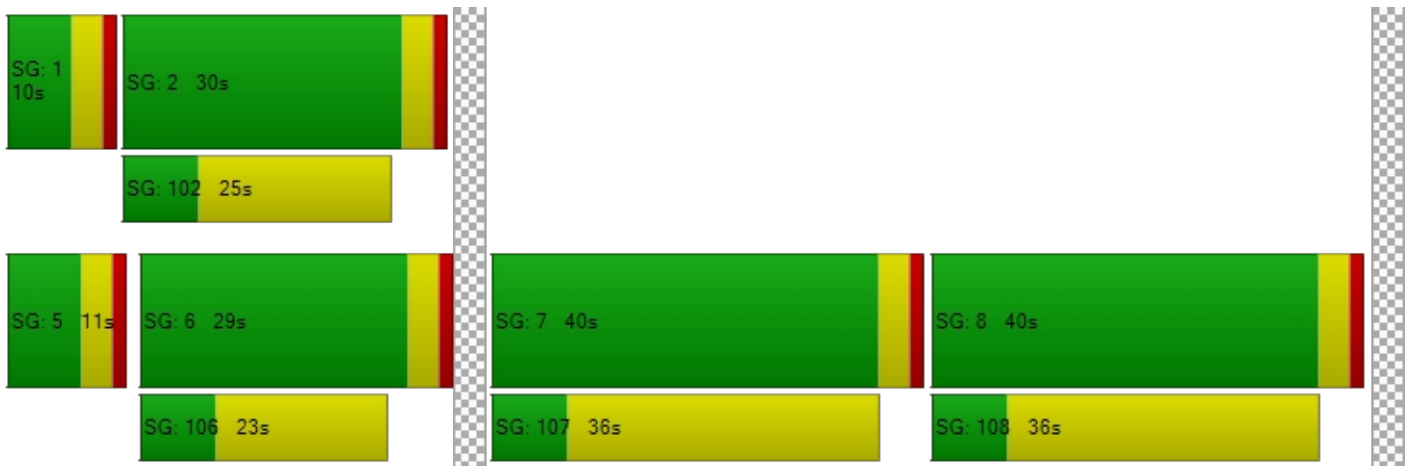
|                                 |       |      |       |      |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 62.3  | 57.1 | 57.1  | 61.1 | 0.00 | 61.5 | 69.5 | 4.61 | 4.59 | 64.2 | 3.64 | 3.86 |
| Movement LOS                    | E     | E    | E     | E    |      | E    | E    | A    | A    | E    | A    | A    |
| d_A, Approach Delay [s/veh]     | 60.58 |      | 61.36 |      | 5.09 |      | 4.82 |      |      |      |      |      |
| Approach LOS                    | E     |      | E     |      | A    |      | A    |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 6.90  |      |       |      |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |       |      |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.329 |      |       |      |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.003 | 1.962 | 2.844 | 2.834 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 600   | 600   | 433   | 417   |
| d_b, Bicycle Delay [s]                                     | 29.41 | 29.41 | 36.82 | 37.61 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.680 | 1.560 | 2.347 | 2.297 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 177.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.103 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Lambert Road |      |      | Ca Ca     |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram]    |      |      | [Diagram] |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes       |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Lambert Road |      |      | Ca Ca |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|-------|------|------|
|  |       |      |      |       |      |      |              |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 370   | 208  | 188  | 8     | 422  | 48   | 56           | 256  | 607  | 106   | 912  | 2    |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 370   | 208  | 188  | 8     | 422  | 48   | 56           | 256  | 607  | 106   | 912  | 2    |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 93    | 52   | 47   | 2     | 106  | 12   | 14           | 64   | 152  | 267   | 228  | 1    |
| Total Analysis Volume [veh/h]                                  | 370   | 208  | 188  | 8     | 422  | 48   | 56           | 256  | 607  | 106   | 912  | 2    |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Unsi | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 17   | 50   | 0    | 10   | 43   | 0    | 13   | 36   | 0    | 24   | 47   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 31   | 0    | 0    | 32   | 0    | 0    | 25   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L      | C     | L    | C    | C    | L    | C    | C    | L    | C    | C    |
|---|--------|-------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120    | 120   | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00   | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00   | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 13     | 29    | 1    | 18   | 18   | 5    | 53   | 53   | 20   | 68   | 68   |
| g / C, Green / Cycle                    | 0.11   | 0.24  | 0.01 | 0.15 | 0.15 | 0.04 | 0.44 | 0.44 | 0.17 | 0.57 | 0.57 |
| (v / s)_i Volume / Saturation Flow Rate | 0.21   | 0.05  | 0.00 | 0.13 | 0.12 | 0.03 | 0.07 | 0.32 | 0.31 | 0.16 | 0.17 |
| s, saturation flow rate [veh/h]         | 1800   | 3800  | 180  | 190  | 190  | 180  | 380  | 190  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 196    | 927   | 23   | 281  | 281  | 78   | 168  | 842  | 584  | 215  | 107  |
| d1, Uniform Delay [s]                   | 53.50  | 36.30 | 58.7 | 49.8 | 49.6 | 56.7 | 19.9 | 27.3 | 50.0 | 13.3 | 13.4 |
| k, delay calibration                    | 0.32   | 0.11  | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.17 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00   | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 412.10 | 0.12  | 8.95 | 7.00 | 6.08 | 11.8 | 0.19 | 5.30 | 375. | 0.32 | 0.69 |
| d3, Initial Queue Delay [s]             | 0.00   | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00   | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00   | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |      |      |      |      |      |      |      |      |      |
|---------------------------------------|--------|--------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 1.89   | 0.22   | 0.35 | 0.85 | 0.83 | 0.72 | 0.15 | 0.72 | 1.83 | 0.28 | 0.29 |
| d, Delay for Lane Group [s/veh]       | 465.60 | 36.42  | 67.7 | 56.8 | 55.7 | 68.6 | 20.1 | 32.6 | 425. | 13.6 | 14.1 |
| Lane Group LOS                        | F      | D      | E    | E    | E    | E    | C    | C    | F    | B    | B    |
| Critical Lane Group                   | Yes    | No     | No   | Yes  | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 28.32  | 2.47   | 0.30 | 7.50 | 7.22 | 1.93 | 2.19 | 15.2 | 39.2 | 4.20 | 4.55 |
| 50th-Percentile Queue Length [ft/ln]  | 708.10 | 61.78  | 7.45 | 187. | 180. | 48.3 | 54.8 | 380. | 980. | 104. | 113. |
| 95th-Percentile Queue Length [veh/ln] | 44.69  | 4.45   | 0.54 | 11.9 | 11.6 | 3.48 | 3.95 | 21.6 | 61.3 | 7.56 | 8.05 |
| 95th-Percentile Queue Length [ft/ln]  | 1117.3 | 111.21 | 13.4 | 299. | 290. | 87.0 | 98.7 | 540. | 153  | 188. | 201. |

**Movement, Approach, & Intersection Results**

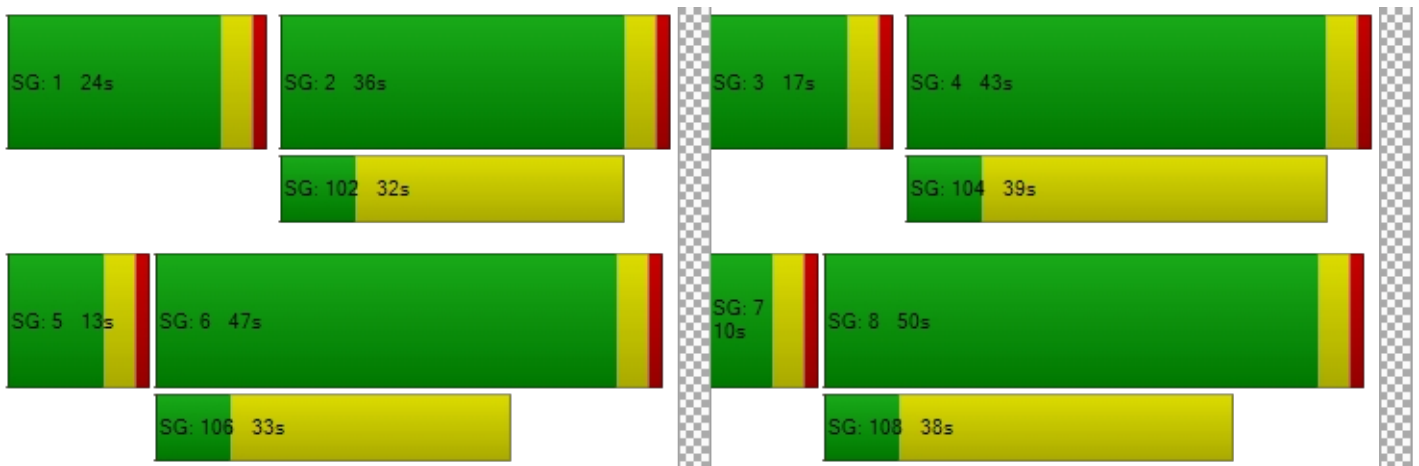
|                                 |        |      |      |       |      |      |       |      |      |        |      |      |
|---------------------------------|--------|------|------|-------|------|------|-------|------|------|--------|------|------|
| d_M, Delay for Movement [s/veh] | 465.   | 36.4 | 0.00 | 67.7  | 56.3 | 55.7 | 68.6  | 20.1 | 32.6 | 425.   | 13.8 | 14.1 |
| Movement LOS                    | F      | D    |      | E     | E    | E    | E     | C    | C    | F      | B    | B    |
| d_A, Approach Delay [s/veh]     | 311.15 |      |      | 56.49 |      |      | 31.36 |      |      | 235.89 |      |      |
| Approach LOS                    | F      |      |      | E     |      |      | C     |      |      | F      |      |      |
| d_I, Intersection Delay [s/veh] | 177.72 |      |      |       |      |      |       |      |      |        |      |      |
| Intersection LOS                | F      |      |      |       |      |      |       |      |      |        |      |      |
| Intersection V/C                | 1.103  |      |      |       |      |      |       |      |      |        |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.902 | 2.459 | 2.921 | 3.013 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 766   | 650   | 533   | 716   |
| d_b, Bicycle Delay [s]                                     | 22.83 | 27.35 | 32.28 | 24.72 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.036 | 1.954 | 2.065 | 2.650 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**





|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.2   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.615 |

**Intersection Setup**

| Name                         | Santa Fe Road  |      |       | Santa Fe Road   |      |       | Ca Ca   |      |       | Ca Ca   |      |       |
|------------------------------|--|------|-------|---|------|-------|---|------|-------|---|------|-------|
|                              | Northbound   |      |       | Southbound  |      |       | Eastbound   |      |       | Westbound   |      |       |
| Approach                     |  |      |       |   |      |       |   |      |       |   |      |       |
| Lane Configuration           |  |      |       |  |      |       |  |      |       |  |      |       |
| Turning Movement             | Left   | Thru | Right | Left  | Thru | Right | Left  | Thru | Right | Left  | Thru | Right |
| Lane Width [ft]              | 12.0   | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0  | 0    | 0     | 0   | 0    | 0     | 1   | 0    | 0     | 1   | 0    | 1     |
| Entry Pocket Length [ft]     | 100.   | 100. | 100.  | 100.  | 100. | 100.  | 100.  | 100. | 100.  | 100.  | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0  | 0    | 0     | 0   | 0    | 0     | 0   | 0    | 0     | 0   | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00   | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  |
| Speed [mph]                  | 30.00  |      |       | 30.00   |      |       | 30.00   |      |       | 30.00   |      |       |
| Grade [%]                    | 0.00   |      |       | 0.00  |      |       | 0.00  |      |       | 0.00  |      |       |
| Curb Present                 | No   |      |       | No  |      |       | No  |      |       | No  |      |       |
| Crosswalk                    | Yes  |      |       | Yes   |      |       | No  |      |       | Yes   |      |       |

**Volumes**

| Name   | Santa Fe Road |      |      | Santa Fe Road |      |      | Ca Ca |      |      | Ca Ca |      |      |
|--|---------------|------|------|---------------|------|------|-------|------|------|-------|------|------|
|  |               |      |      |               |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 5             | 1    | 1    | 0             | 0    | 29   | 22    | 437  | 8    | 7     | 199  | 6    |
| Base Volume Adjustment Factor                                  | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00          | 2.00 | 2.00 | 2.00          | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 5             | 1    | 1    | 0             | 0    | 29   | 22    | 437  | 8    | 7     | 199  | 6    |
| Peak Hour Factor   | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00          | 1.00 | 1.00 | 1.00          | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 1             | 0    | 0    | 0             | 0    | 7    | 6     | 109  | 2    | 2     | 500  | 2    |
| Total Analysis Volume [veh/h]                                  | 5             | 1    | 1    | 0             | 0    | 29   | 22    | 437  | 8    | 7     | 199  | 6    |
| Presence of On-Street Parking                                  | No            |      | No   | No            |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0             | 0    | 0    | 0             | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0             |      |      | 0             |      |      | 0     |      |      | 0     |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 0    | 4    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 0    | 6    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 0    | 30   | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 0.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 0.0  | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 35   | 0    | 0    | 0    | 35   | 10   | 62   | 0    | 23   | 75   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 0.0  | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 0    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 24   | 0    | 0    | 0    | 0    | 0    | 17   | 0    | 0    | 19   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      |      | No   |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 0.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 0.0  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      |      | No   | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      |      | No   | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      |      | No   | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | R     | L    | C    | C    | L    | C    | R    |
|---|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 4     | 4     | 3    | 103  | 103  | 1    | 101  | 101  |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.03 | 0.86 | 0.86 | 0.01 | 0.84 | 0.84 |
| (v / s)_i Volume / Saturation Flow Rate | 0.00  | 0.02  | 0.01 | 0.12 | 0.12 | 0.00 | 0.53 | 0.00 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 180  | 190  | 190  | 190  | 380  | 190  |
| c, Capacity [veh/h]                     | 108   | 60    | 47   | 163  | 163  | 21   | 320  | 160  |
| d1, Uniform Delay [s]                   | 56.50 | 57.15 | 57.5 | 1.38 | 1.37 | 58.9 | 3.15 | 1.50 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.25  | 6.02  | 6.87 | 0.18 | 0.17 | 9.39 | 0.93 | 0.00 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.06  | 0.49  | 0.46 | 0.14 | 0.14 | 0.34 | 0.62 | 0.00 |
| d, Delay for Lane Group [s/veh]       | 56.75 | 63.17 | 64.4 | 1.55 | 1.55 | 68.3 | 4.08 | 1.50 |
| Lane Group LOS                        | E     | E     | E    | A    | A    | E    | A    | A    |
| Critical Lane Group                   | No    | Yes   | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.21  | 0.97  | 0.75 | 0.54 | 0.54 | 0.27 | 5.39 | 0.02 |
| 50th-Percentile Queue Length [ft/ln]  | 5.35  | 24.14 | 18.7 | 13.6 | 13.5 | 6.63 | 134. | 0.40 |
| 95th-Percentile Queue Length [veh/ln] | 0.39  | 1.74  | 1.35 | 0.98 | 0.98 | 0.48 | 9.19 | 0.03 |
| 95th-Percentile Queue Length [ft/ln]  | 9.64  | 43.46 | 33.7 | 24.5 | 24.3 | 11.9 | 229. | 0.72 |

**Movement, Approach, & Intersection Results**

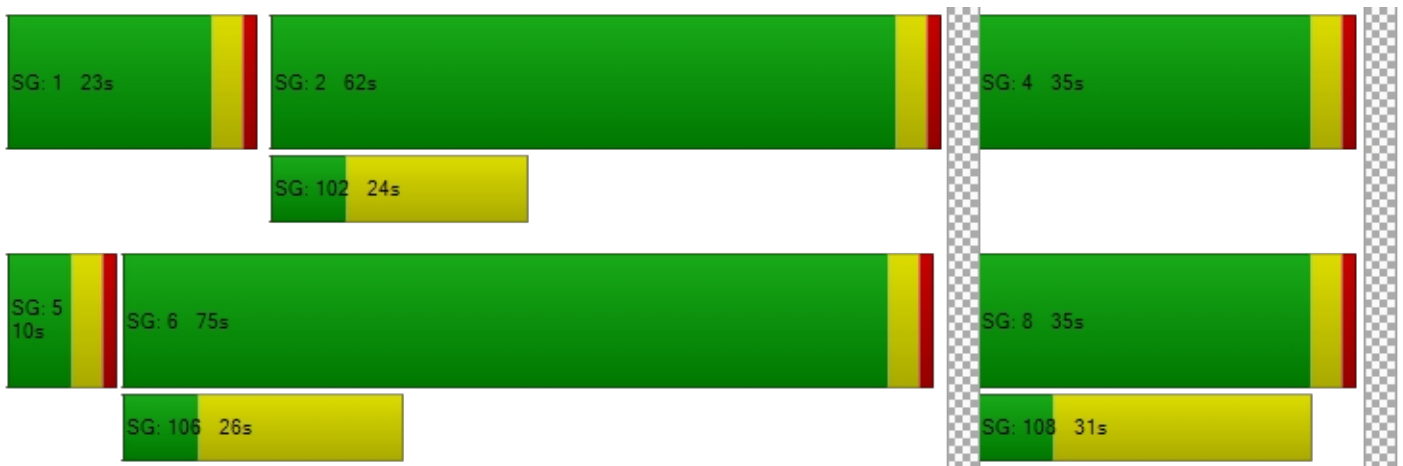
|                                 |       |      |      |       |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 56.7  | 56.7 | 56.7 | 0.00  | 0.00 | 63.1 | 64.4 | 1.55 | 1.55 | 68.3 | 4.08 | 1.50 |
| Movement LOS                    | E     | E    | E    |       |      | E    | E    | A    | A    | E    | A    | A    |
| d_A, Approach Delay [s/veh]     | 56.75 |      |      | 63.17 |      |      | 4.51 |      |      | 4.29 |      |      |
| Approach LOS                    | E     |      |      | E     |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 5.16  |      |      |       |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |      |       |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.615 |      |      |       |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.50 | 49.50 | 0.00  | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.739 | 1.757 | 0.000 | 2.865 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 517   | 517   | 967   | 1184  |
| d_b, Bicycle Delay [s]                                     | 33.00 | 33.00 | 16.01 | 10.00 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.571 | 1.560 | 1.945 | 3.219 |
| Bicycle LOS  | A     | A     | A     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 48.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.868 |

**Intersection Setup**

| Name                         | St Co      |      |      | St Co      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | KORR       |      |      | KORR       |      |      | KORR         |      |      | KORR         |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | St Co |      |      | St Co |      |      | Birch Street |      |      | Birch Street |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 88    | 177  | 118  | 776   | 976  | 254  | 125          | 582  | 68   | 105          | 664  | 338  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 88    | 177  | 118  | 776   | 976  | 254  | 125          | 582  | 68   | 105          | 664  | 338  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 22    | 44   | 30   | 194   | 244  | 64   | 31           | 146  | 17   | 26           | 166  | 85   |
| Total Analysis Volume [veh/h]                                  | 88    | 177  | 118  | 776   | 976  | 254  | 125          | 582  | 68   | 105          | 664  | 338  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 39   | 0    | 32   | 61   | 0    | 10   | 39   | 0    | 10   | 39   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 28   | 0    | 0    | 30   | 0    | 0    | 28   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | R    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6    | 35   | 35   | 28   | 57   | 57   | 6    | 35   | 35   | 6    | 35   | 35   |
| g / C, Green / Cycle                    | 0.05 | 0.29 | 0.29 | 0.23 | 0.48 | 0.48 | 0.05 | 0.29 | 0.29 | 0.05 | 0.29 | 0.29 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.05 | 0.06 | 0.22 | 0.51 | 0.13 | 0.04 | 0.15 | 0.04 | 0.03 | 0.17 | 0.18 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 190  | 190  | 350  | 380  | 190  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 166  | 110  | 552  | 817  | 905  | 905  | 175  | 111  | 560  | 170  | 111  | 557  |
| d1, Uniform Delay [s]                   | 55.8 | 31.6 | 32.2 | 45.3 | 31.4 | 18.9 | 56.1 | 35.2 | 30.9 | 56.0 | 36.3 | 36.4 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.12 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 2.63 | 0.07 | 0.19 | 6.94 | 41.1 | 0.17 | 5.33 | 1.73 | 0.44 | 3.64 | 2.36 | 4.86 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.53 | 0.16 | 0.21 | 0.95 | 1.08 | 0.28 | 0.71 | 0.52 | 0.12 | 0.62 | 0.60 | 0.61 |
| d, Delay for Lane Group [s/veh]       | 58.4 | 31.7 | 32.4 | 52.2 | 72.5 | 19.1 | 61.4 | 36.9 | 31.4 | 59.6 | 38.7 | 41.3 |
| Lane Group LOS                        | E    | C    | C    | D    | F    | B    | E    | D    | C    | E    | D    | D    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 1.36 | 1.94 | 2.64 | 12.0 | 17.7 | 4.31 | 2.00 | 7.37 | 1.53 | 1.65 | 8.69 | 9.26 |
| 50th-Percentile Queue Length [ft/ln]  | 34.0 | 48.4 | 66.0 | 302. | 443. | 107. | 49.8 | 184. | 38.1 | 41.1 | 217. | 231. |
| 95th-Percentile Queue Length [veh/ln] | 2.45 | 3.49 | 4.75 | 17.7 | 26.0 | 7.71 | 3.59 | 11.8 | 2.75 | 2.96 | 13.5 | 14.2 |
| 95th-Percentile Queue Length [ft/ln]  | 61.3 | 87.1 | 118. | 444. | 650. | 192. | 89.7 | 295. | 68.6 | 74.0 | 338. | 356. |

**Movement, Approach, & Intersection Results**

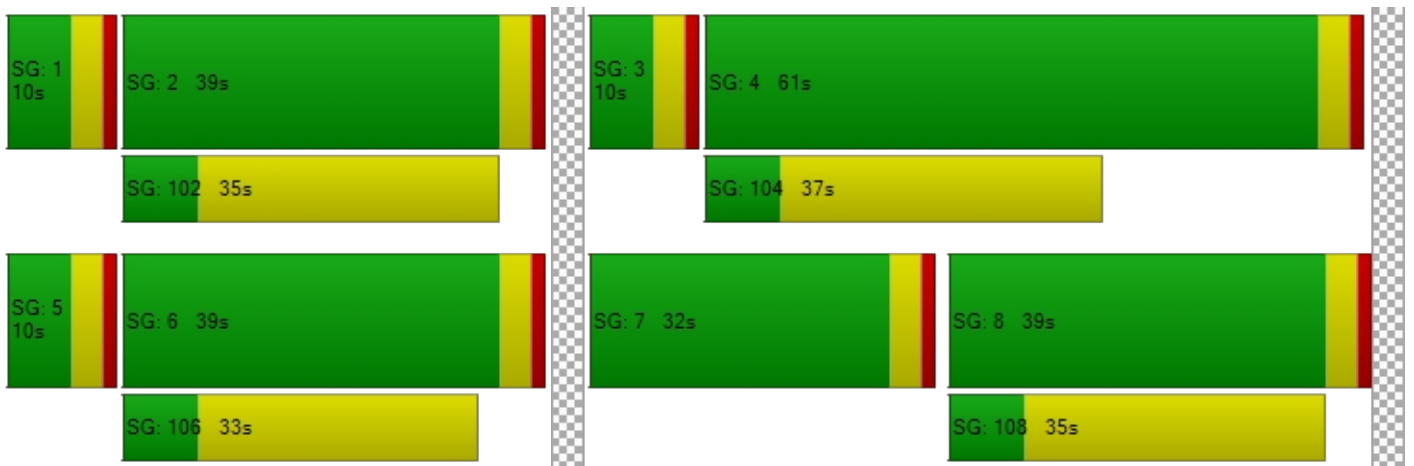
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 58.4  | 31.7 | 32.4 | 52.2  | 72.5 | 19.1 | 61.4  | 36.9 | 31.4 | 59.6  | 38.7 | 41.3 |
| Movement LOS                    | E     | C    | C    | D     | F    | B    | E     | D    | C    | E     | D    | D    |
| d_A, Approach Delay [s/veh]     | 38.10 |      |      | 57.92 |      |      | 40.45 |      |      | 41.49 |      |      |
| Approach LOS                    | D     |      |      | E     |      |      | D     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 48.72 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.868 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.50 | 49.50 | 49.50 | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.821 | 2.976 | 2.856 | 2.967 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 583   | 950   | 583   | 583   |
| d_b, Bicycle Delay [s]                                     | 30.10 | 16.54 | 30.10 | 30.10 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.876 | 3.215 | 2.199 | 2.473 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.781 |

**Intersection Setup**

| Name                         | S As       |      |      | S As       |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T        |      |      | T T          |      |      | T T T        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | S As |      |      | S As |      |      | Birch Street |      |      | Birch Street |      |      |
|--|------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|  |      |      |      |      |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 286  | 7    | 364  | 63   | 34   | 11   | 5            | 110  | 374  | 405          | 899  | 11   |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 286  | 7    | 364  | 63   | 34   | 11   | 5            | 110  | 374  | 405          | 899  | 11   |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 72   | 2    | 91   | 16   | 9    | 3    | 1            | 276  | 94   | 101          | 225  | 3    |
| Total Analysis Volume [veh/h]                                  | 286  | 7    | 364  | 63   | 34   | 11   | 5            | 110  | 374  | 405          | 899  | 11   |
| Presence of On-Street Parking                                  | No   |      | No   | No   |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Ove  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 8    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      | 1,8  |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 6    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 30   | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 23   | 60   | 60   | 0    | 37   | 0    | 10   | 38   | 0    | 22   | 50   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 7    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 26   | 26   | 0    | 26   | 0    | 0    | 27   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   | No   |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   | No   |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   | No   |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L     | C     | L    | C    | C    | L    | C    | C    |
|---|------|------|------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120   | 120   | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 0.00 | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 12   | 22   | 44   | 6     | 6     | 1    | 68   | 68   | 18   | 85   | 85   |
| g / C, Green / Cycle                    | 0.10 | 0.19 | 0.37 | 0.05  | 0.05  | 0.01 | 0.56 | 0.56 | 0.15 | 0.71 | 0.71 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.00 | 0.19 | 0.04  | 0.02  | 0.00 | 0.40 | 0.38 | 0.12 | 0.24 | 0.24 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 1800  | 1900  | 180  | 190  | 190  | 350  | 190  | 190  |
| c, Capacity [veh/h]                     | 353  | 353  | 701  | 120   | 98    | 15   | 107  | 107  | 525  | 134  | 134  |
| d1, Uniform Delay [s]                   | 52.8 | 39.9 | 29.5 | 55.96 | 55.31 | 59.2 | 19.0 | 18.2 | 49.0 | 6.82 | 6.81 |
| k, delay calibration                    | 0.11 | 0.11 | 0.28 | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.44 | 0.02 | 1.54 | 3.55  | 3.35  | 13.0 | 4.03 | 3.30 | 2.44 | 0.69 | 0.68 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |       |       |      |      |      |      |      |      |
|---------------------------------------|------|------|------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.81 | 0.02 | 0.52 | 0.53  | 0.46  | 0.34 | 0.71 | 0.67 | 0.77 | 0.34 | 0.34 |
| d, Delay for Lane Group [s/veh]       | 57.2 | 39.9 | 31.0 | 59.51 | 58.66 | 72.2 | 23.0 | 21.5 | 51.4 | 7.51 | 7.50 |
| Lane Group LOS                        | E    | D    | C    | E     | E     | E    | C    | C    | D    | A    | A    |
| Critical Lane Group                   | No   | No   | Yes  | No    | No    | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 4.44 | 0.17 | 8.48 | 1.99  | 1.42  | 0.20 | 16.0 | 14.3 | 6.01 | 4.39 | 4.37 |
| 50th-Percentile Queue Length [ft/ln]  | 110. | 4.32 | 211. | 49.86 | 35.40 | 5.12 | 401. | 358. | 150. | 109. | 109. |
| 95th-Percentile Queue Length [veh/ln] | 7.89 | 0.31 | 13.2 | 3.59  | 2.55  | 0.37 | 22.6 | 20.5 | 10.0 | 7.83 | 7.80 |
| 95th-Percentile Queue Length [ft/ln]  | 197. | 7.77 | 331. | 89.76 | 63.71 | 9.21 | 565. | 513. | 250. | 195. | 194. |

**Movement, Approach, & Intersection Results**

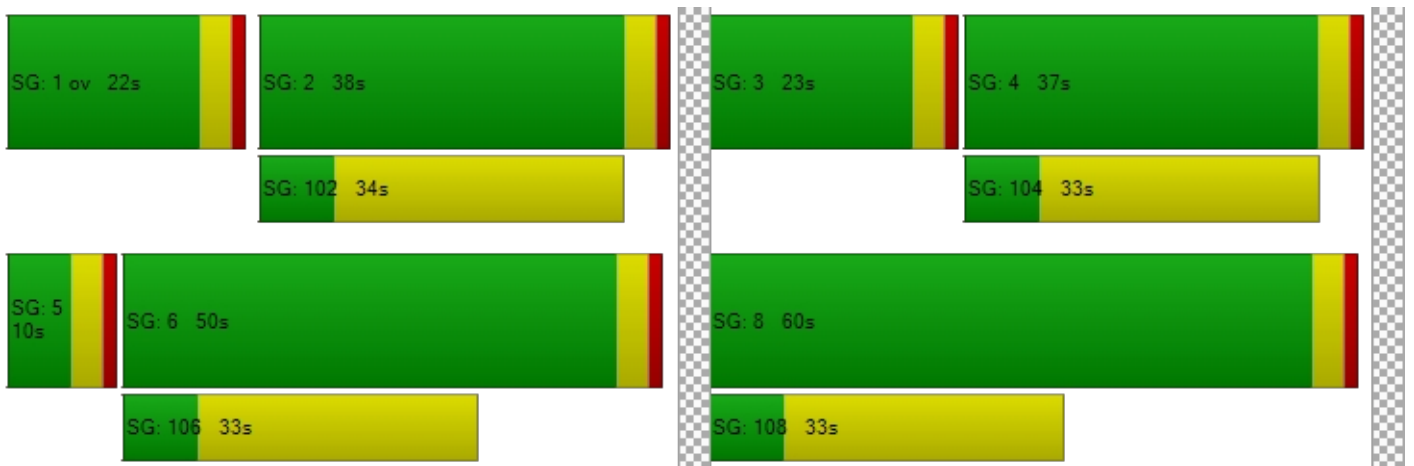
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.2  | 39.9 | 31.0 | 59.5  | 58.6 | 58.6 | 72.2  | 22.6 | 21.5 | 51.4  | 7.50 | 7.50 |
| Movement LOS                    | E     | D    | C    | E     | E    | E    | E     | C    | C    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 42.57 |      |      | 59.15 |      |      | 22.53 |      |      | 21.04 |      |      |
| Approach LOS                    | D     |      |      | E     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 26.78 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.781 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.706 | 1.997 | 2.836 | 3.019 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 933   | 550   | 567   | 767   |
| d_b, Bicycle Delay [s]                                     | 17.07 | 31.54 | 30.82 | 22.82 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.644 | 1.738 | 2.784 | 2.644 |
| Bicycle LOS  | B     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.745 |

**Intersection Setup**

| Name                         | N As       |      |      | N As       |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram]    |      |      | [Diagram]    |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram]    |      |      | [Diagram]    |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1            | 0    | 0    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | No           |      |      |

**Volumes**

| Name   | N As |      |      | N As |      |      | Birch Street |      |      | Birch Street |      |      |
|--|------|------|------|------|------|------|--------------|------|------|--------------|------|------|
|  |      |      |      |      |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 3    | 3    | 6    | 187  | 2    | 524  | 371          | 102  | 19   | 9            | 873  | 99   |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 3    | 3    | 6    | 187  | 2    | 524  | 371          | 102  | 19   | 9            | 873  | 99   |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 1    | 1    | 2    | 47   | 1    | 131  | 93           | 256  | 5    | 2            | 218  | 25   |
| Total Analysis Volume [veh/h]                                  | 3    | 3    | 6    | 187  | 2    | 524  | 371          | 102  | 19   | 9            | 873  | 99   |
| Presence of On-Street Parking                                  | No   |      | No   | No   |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0    | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0    |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Ove  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5  |      |      |      |      |      |      |
| Lead / Lag                   | -     | -     | -     | -     | -     | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30   | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34   | 44   | 38   | 0    | 38   | 32   | 0    |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23   | 0    | 18   | 0    | 0    | 21   | 0    |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |       | No    |       |       | No    |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |       | No    |       |       | No    | No   | No   | No   |      | No   | No   |      |
| Maximum Recall               |       | No    |       |       | No    | No   | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |       | No    |       |       | No    | No   | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | C    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 0.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 2    | 2    | 2    | 25   | 25   | 63   | 28   | 75   | 75   | 2    | 49   | 49   |
| g / C, Green / Cycle                    | 0.02 | 0.02 | 0.02 | 0.21 | 0.21 | 0.53 | 0.24 | 0.63 | 0.63 | 0.01 | 0.41 | 0.41 |
| (v / s)_i Volume / Saturation Flow Rate | 0.00 | 0.00 | 0.00 | 0.05 | 0.05 | 0.28 | 0.21 | 0.27 | 0.27 | 0.01 | 0.23 | 0.05 |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 180  | 190  | 180  | 190  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 67   | 33   | 33   | 373  | 373  | 100  | 423  | 119  | 119  | 25   | 154  | 773  |
| d1, Uniform Delay [s]                   | 58.0 | 58.0 | 58.1 | 39.8 | 39.8 | 18.6 | 44.2 | 11.4 | 11.4 | 58.6 | 27.4 | 22.2 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.18 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.28 | 1.17 | 2.58 | 0.35 | 0.35 | 1.96 | 9.21 | 1.17 | 1.16 | 8.46 | 1.50 | 0.34 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.05 | 0.09 | 0.18 | 0.25 | 0.25 | 0.52 | 0.88 | 0.44 | 0.44 | 0.36 | 0.56 | 0.13 |
| d, Delay for Lane Group [s/veh]       | 58.3 | 59.2 | 60.7 | 40.1 | 40.1 | 20.5 | 53.4 | 12.6 | 12.5 | 67.1 | 28.9 | 22.6 |
| Lane Group LOS                        | E    | E    | E    | D    | D    | C    | D    | B    | B    | E    | C    | C    |
| Critical Lane Group                   | No   | No   | Yes  | No   | No   | Yes  | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.09 | 0.10 | 0.20 | 2.38 | 2.39 | 9.89 | 11.6 | 7.23 | 7.17 | 0.33 | 9.89 | 1.84 |
| 50th-Percentile Queue Length [ft/ln]  | 2.37 | 2.51 | 5.09 | 59.5 | 59.6 | 247. | 291. | 180. | 179. | 8.26 | 247. | 45.9 |
| 95th-Percentile Queue Length [veh/ln] | 0.17 | 0.18 | 0.37 | 4.29 | 4.29 | 15.0 | 17.2 | 11.6 | 11.5 | 0.59 | 15.0 | 3.31 |
| 95th-Percentile Queue Length [ft/ln]  | 4.27 | 4.52 | 9.16 | 107. | 107. | 376. | 431. | 290. | 289. | 14.8 | 376. | 82.6 |

**Movement, Approach, & Intersection Results**

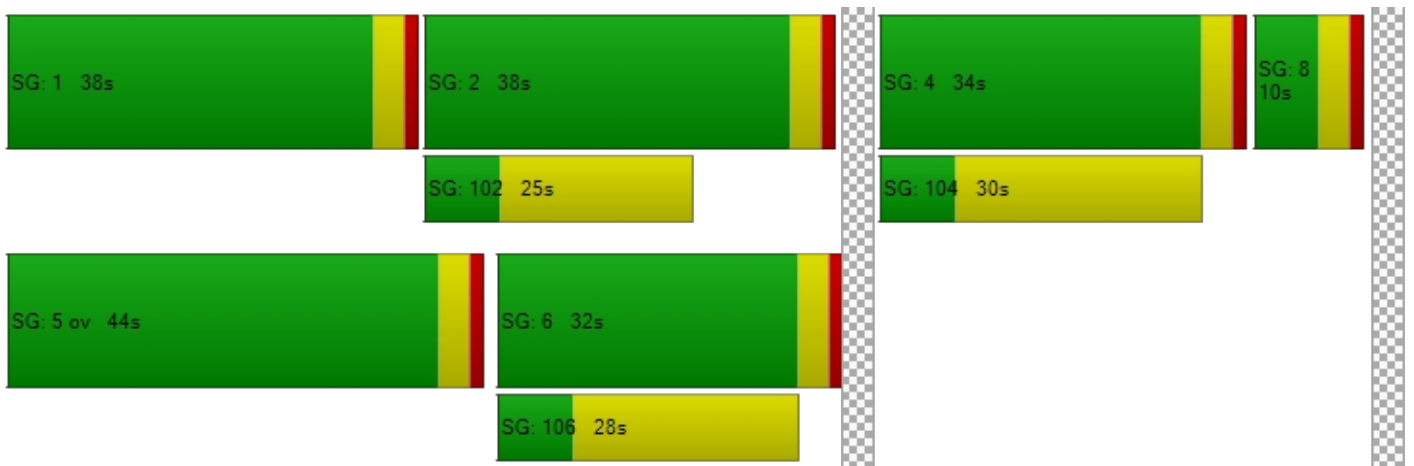
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 58.3  | 59.2 | 60.7 | 40.1  | 40.1 | 20.5 | 53.4  | 12.5 | 12.5 | 67.1  | 28.9 | 22.6 |
| Movement LOS                    | E     | E    | E    | D     | D    | C    | D     | B    | B    | E     | C    | C    |
| d_A, Approach Delay [s/veh]     | 59.74 |      |      | 25.76 |      |      | 23.32 |      |      | 28.62 |      |      |
| Approach LOS                    | E     |      |      | C     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 25.68 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.745 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.155 | 2.434 | 2.866 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 100   | 500   | 567   | 467   |
| d_b, Bicycle Delay [s]                                     | 54.17 | 33.76 | 30.83 | 35.28 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.579 | 2.736 | 2.725 | 2.369 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 36.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.623 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Birch Street |      |      | Birch Street |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T          |      |      | T T          |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 1    | 1            | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | Kr Bo |      |      | Kr Bo |      |      | Birch Street |      |      | Birch Street |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|--------------|------|------|
|  |       |      |      |       |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 155   | 260  | 106  | 507   | 120  | 224  | 56           | 684  | 388  | 72           | 522  | 247  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 155   | 260  | 106  | 507   | 120  | 224  | 56           | 684  | 388  | 72           | 522  | 247  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 39    | 65   | 27   | 127   | 300  | 56   | 14           | 171  | 97   | 18           | 131  | 62   |
| Total Analysis Volume [veh/h]                                  | 155   | 260  | 106  | 507   | 120  | 224  | 56           | 684  | 388  | 72           | 522  | 247  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 29   | 37   | 0    | 34   | 42   | 0    | 10   | 39   | 0    | 10   | 39   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 26   | 0    | 0    | 26   | 0    | 0    | 28   | 0    | 0    | 28   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L    | C    | R    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 8    | 22   | 22   | 20   | 35   | 35   | 5    | 55   | 55   | 6    | 56   | 56   |
| g / C, Green / Cycle                    | 0.06 | 0.19 | 0.19 | 0.17 | 0.29 | 0.29 | 0.04 | 0.46 | 0.46 | 0.05 | 0.47 | 0.47 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.07 | 0.06 | 0.14 | 0.25 | 0.25 | 0.03 | 0.18 | 0.20 | 0.04 | 0.14 | 0.13 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 380  | 190  | 180  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 222  | 712  | 356  | 589  | 111  | 555  | 78   | 175  | 875  | 91   | 177  | 889  |
| d1, Uniform Delay [s]                   | 55.1 | 42.4 | 42.2 | 48.5 | 40.1 | 39.8 | 56.7 | 21.3 | 21.9 | 56.3 | 19.6 | 19.5 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.12 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.97 | 0.29 | 0.55 | 3.87 | 2.11 | 3.91 | 11.8 | 0.66 | 1.63 | 13.8 | 0.42 | 0.78 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.70 | 0.35 | 0.33 | 0.86 | 0.86 | 0.84 | 0.72 | 0.39 | 0.44 | 0.79 | 0.29 | 0.28 |
| d, Delay for Lane Group [s/veh]       | 59.0 | 42.6 | 42.8 | 52.4 | 42.3 | 43.7 | 68.6 | 21.9 | 23.5 | 70.1 | 20.1 | 20.3 |
| Lane Group LOS                        | E    | D    | D    | D    | D    | D    | E    | C    | C    | E    | C    | C    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.42 | 3.23 | 3.12 | 7.68 | 13.5 | 13.4 | 1.93 | 6.45 | 7.75 | 2.51 | 4.59 | 4.40 |
| 50th-Percentile Queue Length [ft/ln]  | 60.5 | 80.7 | 78.1 | 192. | 339. | 335. | 48.3 | 161. | 193. | 62.7 | 114. | 110. |
| 95th-Percentile Queue Length [veh/ln] | 4.36 | 5.81 | 5.62 | 12.2 | 19.6 | 19.4 | 3.48 | 10.6 | 12.3 | 4.52 | 8.10 | 7.84 |
| 95th-Percentile Queue Length [ft/ln]  | 108. | 145. | 140. | 305. | 490. | 486. | 87.0 | 265. | 307. | 112. | 202. | 196. |

**Movement, Approach, & Intersection Results**

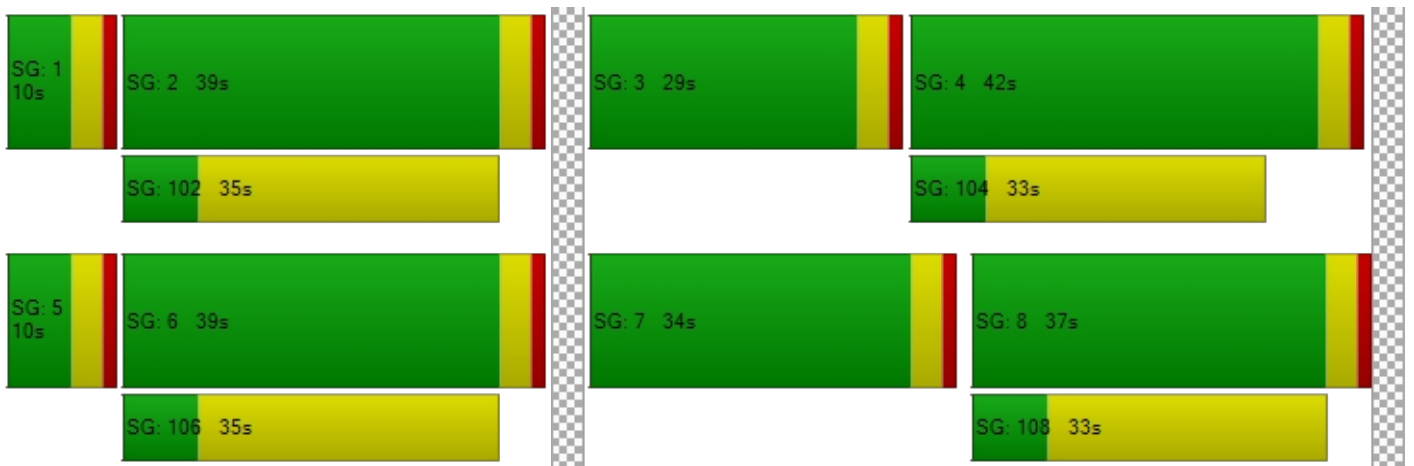
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 59.0  | 42.7 | 42.8 | 52.4  | 42.6 | 43.7 | 68.6  | 21.9 | 23.5 | 70.1  | 20.1 | 20.3 |
| Movement LOS                    | E     | D    | D    | D     | D    | D    | E     | C    | C    | E     | C    | C    |
| d_A, Approach Delay [s/veh]     | 47.60 |      |      | 45.32 |      |      | 24.84 |      |      | 24.45 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 36.40 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | D     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.623 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 3.005 | 3.043 | 2.796 | 2.814 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 550   | 633   | 583   | 583   |
| d_b, Bicycle Delay [s]                                     | 31.55 | 28.03 | 30.12 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.846 | 2.622 | 2.490 | 2.253 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 132.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.956 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Birch Street |      |      | Rose Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound  |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T        |      |      | T T T      |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1          | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00       |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes        |      |      |



**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Birch Street |      |      | Rose Drive |      |      |
|--|-------|------|------|-------|------|------|--------------|------|------|------------|------|------|
|  |       |      |      |       |      |      |              |      |      |            |      |      |
| Base Volume Input [veh/h]                                      | 156   | 271  | 27   | 920   | 991  | 314  | 82           | 540  | 150  | 45         | 434  | 408  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 156   | 271  | 27   | 920   | 991  | 314  | 82           | 540  | 150  | 45         | 434  | 408  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 39    | 68   | 7    | 230   | 248  | 79   | 21           | 135  | 38   | 11         | 109  | 102  |
| Total Analysis Volume [veh/h]                                  | 156   | 271  | 27   | 920   | 991  | 314  | 82           | 540  | 150  | 45         | 434  | 408  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No           |      | No   | No         |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0            | 0    | 0    | 0          | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0            |      |      | 0          |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 17   | 38   | 0    | 36   | 57   | 0    | 10   | 36   | 0    | 10   | 36   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 27   | 0    | 0    | 25   | 0    | 0    | 25   | 0    | 0    | 25   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L    | C    | C    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 12   | 25   | 25   | 32   | 45   | 45   | 6    | 42   | 42   | 5    | 41   | 41   |
| g / C, Green / Cycle                    | 0.10 | 0.21 | 0.21 | 0.27 | 0.37 | 0.37 | 0.05 | 0.35 | 0.35 | 0.04 | 0.35 | 0.35 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.08 | 0.08 | 0.51 | 0.34 | 0.34 | 0.02 | 0.19 | 0.17 | 0.03 | 0.11 | 0.21 |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 350  | 190  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 184  | 395  | 395  | 480  | 707  | 707  | 166  | 670  | 670  | 71   | 131  | 655  |
| d1, Uniform Delay [s]                   | 53.0 | 40.9 | 40.8 | 44.0 | 36.0 | 36.0 | 55.7 | 30.9 | 30.4 | 56.7 | 29.0 | 32.8 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.50 | 0.30 | 0.30 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 10.3 | 0.61 | 0.59 | 420. | 13.1 | 13.1 | 2.25 | 3.03 | 2.61 | 8.79 | 0.68 | 4.41 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.85 | 0.38 | 0.37 | 1.92 | 0.92 | 0.92 | 0.49 | 0.53 | 0.50 | 0.63 | 0.33 | 0.62 |
| d, Delay for Lane Group [s/veh]       | 63.3 | 41.5 | 41.4 | 464. | 49.1 | 49.1 | 58.0 | 34.0 | 33.0 | 65.5 | 29.7 | 37.2 |
| Lane Group LOS                        | E    | D    | D    | F    | D    | D    | E    | C    | C    | E    | C    | D    |
| Critical Lane Group                   | No   | Yes  | No   | Yes  | No   | No   | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 5.15 | 3.92 | 3.82 | 70.1 | 20.5 | 20.5 | 1.26 | 8.79 | 8.01 | 1.52 | 4.76 | 10.6 |
| 50th-Percentile Queue Length [ft/ln]  | 128. | 97.9 | 95.5 | 175  | 512. | 512. | 31.6 | 219. | 200. | 37.9 | 119. | 266. |
| 95th-Percentile Queue Length [veh/ln] | 8.87 | 7.06 | 6.88 | 109. | 27.9 | 27.9 | 2.28 | 13.6 | 12.6 | 2.74 | 8.34 | 15.9 |
| 95th-Percentile Queue Length [ft/ln]  | 221. | 176. | 172. | 274  | 698. | 698. | 56.9 | 341. | 316. | 68.3 | 208. | 399. |

**Movement, Approach, & Intersection Results**

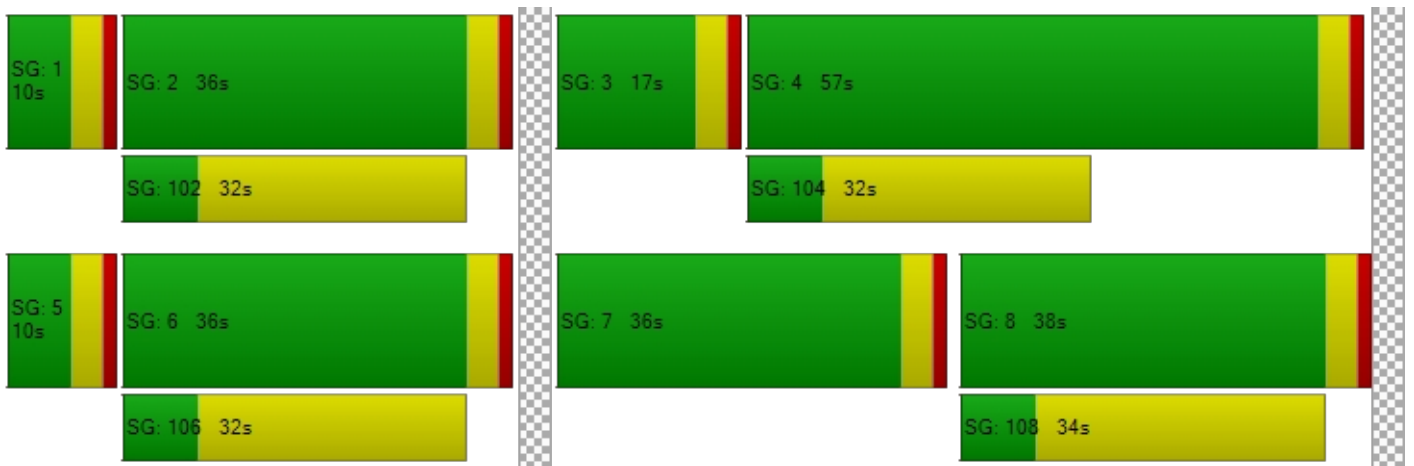
|                                 |        |      |      |        |      |      |       |      |      |       |      |      |
|---------------------------------|--------|------|------|--------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 63.3   | 41.4 | 41.4 | 464.   | 49.1 | 49.1 | 58.0  | 33.6 | 33.0 | 65.5  | 29.7 | 37.2 |
| Movement LOS                    | E      | D    | D    | F      | D    | D    | E     | C    | C    | E     | C    | D    |
| d_A, Approach Delay [s/veh]     | 48.99  |      |      | 221.05 |      |      | 36.16 |      |      | 35.00 |      |      |
| Approach LOS                    | D      |      |      | F      |      |      | D     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 132.10 |      |      |        |      |      |       |      |      |       |      |      |
| Intersection LOS                | F      |      |      |        |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.956  |      |      |        |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.633 | 2.896 | 2.739 | 2.852 |
| Crosswalk LOS  | B     | C     | B     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 567   | 883   | 533   | 533   |
| d_b, Bicycle Delay [s]                                     | 30.83 | 18.72 | 32.28 | 32.28 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.934 | 3.395 | 2.197 | 2.291 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 33.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.007 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Lane Configuration           |            |      |      |            |      |      |                |      |      |                |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left           | Thru | Righ | Left           | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0          | 0    | 1    | 1          | 0    | 1    | 0              | 0    | 0    | 1              | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.           | 100. | 100. | 100.           | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00          |      |      | 30.00          |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00           |      |      | 0.00           |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No             |      |      | No             |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes            |      |      | Yes            |      |      |

**Volumes**

| Name   | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|--|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|  | 54         | 828  | 15   | 6          | 150  | 67   | 61             | 0    | 207  | 35             | 0    | 13   |
| Base Volume Input [veh/h]                                      | 54         | 828  | 15   | 6          | 150  | 67   | 61             | 0    | 207  | 35             | 0    | 13   |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 54         | 828  | 15   | 6          | 150  | 67   | 61             | 0    | 207  | 35             | 0    | 13   |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 14         | 207  | 4    | 2          | 376  | 17   | 15             | 0    | 52   | 9              | 0    | 3    |
| Total Analysis Volume [veh/h]                                  | 54         | 828  | 15   | 6          | 150  | 67   | 61             | 0    | 207  | 35             | 0    | 13   |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No             |      | No   | No             |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 6    | 0    | 0    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 91   | 0    | 0    | 91   | 0    | 0    | 29   | 0    | 0    | 29   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 7    | 0    | 0    | 14   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 92   | 92   | 92   | 92   | 92   | 92   | 20    | 20    | 20    |
| g / C, Green / Cycle                    | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.16  | 0.16  | 0.16  |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.22 | 0.22 | 0.00 | 0.79 | 0.04 | 0.15  | 0.02  | 0.01  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 180  | 1800  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 64   | 146  | 146  | 128  | 146  | 138  | 333   | 64    | 312   |
| d1, Uniform Delay [s]                   | 3.30 | 4.12 | 4.11 | 3.21 | 13.8 | 3.33 | 49.13 | 42.65 | 42.10 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.15  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 74.8 | 0.50 | 0.50 | 0.01 | 31.2 | 0.07 | 6.37  | 7.03  | 0.05  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |        |       |       |
|---------------------------------------|------|------|------|------|------|------|--------|-------|-------|
| X, volume / capacity                  | 0.85 | 0.29 | 0.29 | 0.00 | 1.03 | 0.05 | 0.80   | 0.55  | 0.04  |
| d, Delay for Lane Group [s/veh]       | 78.1 | 4.62 | 4.61 | 3.22 | 45.1 | 3.39 | 55.50  | 49.67 | 42.16 |
| Lane Group LOS                        | E    | A    | A    | A    | F    | A    | E      | D     | D     |
| Critical Lane Group                   | No   | No   | No   | No   | Yes  | No   | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.59 | 2.83 | 2.81 | 0.03 | 43.1 | 0.36 | 8.44   | 1.02  | 0.33  |
| 50th-Percentile Queue Length [ft/ln]  | 39.8 | 70.7 | 70.1 | 0.79 | 107  | 9.04 | 210.98 | 25.38 | 8.28  |
| 95th-Percentile Queue Length [veh/ln] | 2.87 | 5.09 | 5.05 | 0.06 | 55.4 | 0.65 | 13.20  | 1.83  | 0.60  |
| 95th-Percentile Queue Length [ft/ln]  | 71.7 | 127. | 126. | 1.41 | 138  | 16.2 | 330.08 | 45.68 | 14.90 |



**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |      |       |      |      |       |      |      |      |
|---------------------------------|-------|------|-------|------|------|-------|------|------|-------|------|------|------|
| d_M, Delay for Movement [s/veh] | 78.1  | 4.62 | 4.61  | 3.22 | 45.1 | 3.39  | 55.5 | 55.5 | 55.5  | 49.6 | 42.1 | 42.1 |
| Movement LOS                    | E     | A    | A     | A    | F    | A     | E    | E    | E     | D    | D    | D    |
| d_A, Approach Delay [s/veh]     | 9.04  |      | 43.21 |      |      | 55.50 |      |      | 47.64 |      |      |      |
| Approach LOS                    | A     |      | D     |      |      | E     |      |      | D     |      |      |      |
| d_I, Intersection Delay [s/veh] | 33.48 |      |       |      |      |       |      |      |       |      |      |      |
| Intersection LOS                | C     |      |       |      |      |       |      |      |       |      |      |      |
| Intersection V/C                | 1.007 |      |       |      |      |       |      |      |       |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.45 | 49.45 | 49.45 | 49.45 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.839 | 2.884 | 1.995 | 1.985 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1451  | 1451  | 417   | 417   |
| d_b, Bicycle Delay [s]                                     | 4.51  | 4.51  | 37.56 | 37.56 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.300 | 4.160 | 2.002 | 1.639 |
| Bicycle LOS  | B     | D     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 15.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.685 |

**Intersection Setup**

| Name                         |          |      |      | SR-57      |      |      | Im Hi      |      |      | Im Hi     |      |      |           |  |  |
|------------------------------|----------|------|------|------------|------|------|------------|------|------|-----------|------|------|-----------|--|--|
|                              | Approach |      |      | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |  |  |
| Lane Configuration           |          |      |      | ⇐⇐⇐        |      |      | ⇐⇐⇐        |      |      | ⇐⇐⇐       |      |      | ⇐⇐⇐       |  |  |
| Turning Movement             | Left     | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ |           |  |  |
| Lane Width [ft]              | 12.0     | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |           |  |  |
| No. of Lanes in Entry Pocket | 0        | 0    | 0    | 1          | 0    | 1    | 0          | 0    | 1    | 0         | 0    | 1    |           |  |  |
| Entry Pocket Length [ft]     | 100.     | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. |           |  |  |
| No. of Lanes in Exit Pocket  | 0        | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    |           |  |  |
| Exit Pocket Length [ft]      | 0.00     | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |           |  |  |
| Speed [mph]                  | 30.00    |      |      | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      |           |  |  |
| Grade [%]                    | 0.00     |      |      | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      |           |  |  |
| Curb Present                 |          |      |      | No         |      |      | No         |      |      | No        |      |      |           |  |  |
| Crosswalk                    | No       |      |      | Yes        |      |      | No         |      |      | No        |      |      |           |  |  |

**Volumes**

| Name   |      |      |      | SR-57 |      |      | Im Hi |      |      | Im Hi |      |      |
|--|------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |      |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 0    | 0    | 0    | 684   | 0    | 572  | 0     | 174  | 830  | 0     | 223  | 232  |
| Base Volume Adjustment Factor                                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00 | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 0    | 0    | 0    | 684   | 0    | 572  | 0     | 174  | 830  | 0     | 223  | 232  |
| Peak Hour Factor   | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 0    | 0    | 0    | 171   | 0    | 143  | 0     | 436  | 208  | 0     | 558  | 58   |
| Total Analysis Volume [veh/h]                                  | 0    | 0    | 0    | 684   | 0    | 572  | 0     | 174  | 830  | 0     | 223  | 232  |
| Presence of On-Street Parking                                  |      |      |      | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0    | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0    |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Split | Per  | Split | Per  | Per  | Unsi | Per  | Per  | Unsi |
|------------------------------|------|------|------|-------|------|-------|------|------|------|------|------|------|
| Signal Group                 | 0    | 0    | 0    | 7     | 0    | 0     | 0    | 2    | 0    | 0    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |       |      |       |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | Lea   | -    | -     | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0    | 0    | 0    | 6     | 0    | 0     | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0    | 0    | 0    | 30    | 0    | 0     | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 0.0  | 0.0  | 1.0   | 0.0  | 0.0   | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 0    | 0    | 64    | 0    | 0     | 0    | 26   | 0    | 0    | 26   | 0    |
| Vehicle Extension [s]        | 0.0  | 0.0  | 0.0  | 3.0   | 0.0  | 0.0   | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 0    | 0    | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 15   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 0.0  | 0.0  | 2.0   | 0.0  | 0.0   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| Maximum Recall               |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| Pedestrian Recall            |      |      |      | No    |      |       |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              |  | L    | C    | R    | C    | C     |
|---|--|------|------|------|------|-------|
| C, Cycle Length [s]                     |  | 90   | 90   | 90   | 90   | 90    |
| L, Total Lost Time per Cycle [s]        |  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| l2, Clearance Lost Time [s]             |  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  |
| g_i, Effective Green Time [s]           |  | 25   | 25   | 25   | 57   | 57    |
| g / C, Green / Cycle                    |  | 0.28 | 0.28 | 0.28 | 0.63 | 0.63  |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.23 | 0.23 | 0.22 | 0.31 | 0.39  |
| s, saturation flow rate [veh/h]         |  | 180  | 180  | 190  | 5700 | 5700  |
| c, Capacity [veh/h]                     |  | 505  | 505  | 533  | 3595 | 3595  |
| d1, Uniform Delay [s]                   |  | 30.3 | 30.3 | 29.8 | 8.82 | 10.07 |
| k, delay calibration                    |  | 0.11 | 0.11 | 0.11 | 0.50 | 0.50  |
| l, Upstream Filtering Factor            |  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| d2, Incremental Delay [s]               |  | 3.59 | 3.59 | 2.61 | 0.47 | 0.82  |
| d3, Initial Queue Delay [s]             |  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  |
| Rp, platoon ratio                       |  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |
| PF, progression factor                  |  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  |

**Lane Group Results**

|                                       |  |      |      |      |        |        |
|---------------------------------------|--|------|------|------|--------|--------|
| X, volume / capacity                  |  | 0.83 | 0.83 | 0.79 | 0.48   | 0.62   |
| d, Delay for Lane Group [s/veh]       |  | 33.9 | 33.9 | 32.4 | 9.29   | 10.89  |
| Lane Group LOS                        |  | C    | C    | C    | A      | B      |
| Critical Lane Group                   |  | Yes  | No   | No   | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] |  | 8.73 | 8.73 | 8.48 | 5.47   | 8.04   |
| 50th-Percentile Queue Length [ft/ln]  |  | 218. | 218. | 212. | 136.74 | 201.03 |
| 95th-Percentile Queue Length [veh/ln] |  | 13.5 | 13.5 | 13.2 | 9.31   | 12.69  |
| 95th-Percentile Queue Length [ft/ln]  |  | 339. | 339. | 331. | 232.63 | 317.30 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |      |      |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 33.9  | 0.00 | 32.8 | 0.00 | 9.29 | 0.00 | 0.00  | 10.8 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C    |      | A    |      |       | B    |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 33.42 |      |      | 9.29 |      |      | 10.89 |      |      |
| Approach LOS                    | A     |      |      | C     |      |      | A    |      |      | B     |      |      |
| d_I, Intersection Delay [s/veh] | 15.77 |      |      |       |      |      |      |      |      |       |      |      |
| Intersection LOS                | B     |      |      |       |      |      |      |      |      |       |      |      |
| Intersection V/C                | 0.685 |      |      |       |      |      |      |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 0.000 | 2.437 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                     | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection                | 4.132 | 3.632 | 2.518 | 2.787 |
| Bicycle LOS  | D     | D     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.698 |

**Intersection Setup**

| Name                         | SR-57      |      |      | Sh Ce      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | ⇐⇐⇐+       |      |      | ⇐⇐         |      |      | ⇐   ⇐     |      |      | ⇐         |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 0          | 0    | 1    | 1         | 0    | 1    | 0         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | No        |      |      | No        |      |      |

**Volumes**

| Name   | SR-57 |      |      | Sh Ce |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 115   | 43   | 949  | 0     | 0    | 51   | 118   | 155  | 636  | 0     | 175  | 18   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 115   | 43   | 949  | 0     | 0    | 51   | 118   | 155  | 636  | 0     | 175  | 18   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 288   | 11   | 237  | 0     | 0    | 13   | 30    | 389  | 159  | 0     | 439  | 5    |
| Total Analysis Volume [veh/h]                                  | 115   | 43   | 949  | 0     | 0    | 51   | 118   | 155  | 636  | 0     | 175  | 18   |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Per  | Split | Prot | Per  | Unsi | Per  | Per  | Per  |
|------------------------------|-------|-------|-------|-------|------|-------|------|------|------|------|------|------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0    | 4     | 5    | 2    | 0    | 0    | 6    | 0    |
| Auxiliary Signal Groups      |       |       |       |       |      |       |      |      |      |      |      |      |
| Lead / Lag                   | -     | -     | -     | -     | -    | -     | Lea  | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0    | 6     | 6    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0    | 30    | 30   | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0  | 3.0   | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0  | 1.0   | 1.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0     | 48    | 0     | 0     | 0    | 10    | 12   | 42   | 0    | 0    | 30   | 0    |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0  | 3.0   | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0    | 0     | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0    | 0     | 0    | 22   | 0    | 0    | 19   | 0    |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |       | No    |       |       |      | No    |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0  | 2.0   | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0  | 2.0   | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |       | No    |       |       |      | No    | No   | No   |      |      | No   |      |
| Maximum Recall               |       | No    |       |       |      | No    | No   | No   |      |      | No   |      |
| Pedestrian Recall            |       | No    |       |       |      | No    | No   | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | R     | L     | C     | C     | C     |
|---|------|------|------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100  | 100  | 100  | 100   | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 37   | 37   | 37   | 5     | 8     | 47    | 35    | 35    |
| g / C, Green / Cycle                    | 0.37 | 0.37 | 0.37 | 0.05  | 0.08  | 0.47  | 0.35  | 0.35  |
| (v / s)_i Volume / Saturation Flow Rate | 0.30 | 0.30 | 0.29 | 0.01  | 0.07  | 0.27  | 0.23  | 0.23  |
| s, saturation flow rate [veh/h]         | 350  | 180  | 190  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 127  | 657  | 693  | 177   | 145   | 2671  | 1983  | 661   |
| d1, Uniform Delay [s]                   | 28.9 | 28.9 | 28.3 | 46.13 | 45.28 | 19.44 | 27.77 | 27.77 |
| k, delay calibration                    | 0.11 | 0.22 | 0.19 | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.43 | 5.40 | 3.51 | 0.89  | 10.30 | 0.93  | 1.83  | 5.35  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |       |        |        |        |        |
|---------------------------------------|------|------|------|-------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.83 | 0.83 | 0.78 | 0.29  | 0.81   | 0.58   | 0.67   | 0.67   |
| d, Delay for Lane Group [s/veh]       | 30.3 | 34.3 | 31.8 | 47.02 | 55.57  | 20.37  | 29.60  | 33.12  |
| Lane Group LOS                        | C    | C    | C    | D     | E      | C      | C      | C      |
| Critical Lane Group                   | No   | Yes  | No   | Yes   | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 11.4 | 12.5 | 11.9 | 0.63  | 3.28   | 8.70   | 9.14   | 9.79   |
| 50th-Percentile Queue Length [ft/ln]  | 285. | 312. | 298. | 15.82 | 81.99  | 217.41 | 228.55 | 244.75 |
| 95th-Percentile Queue Length [veh/ln] | 16.9 | 18.3 | 17.6 | 1.14  | 5.90   | 13.53  | 14.10  | 14.92  |
| 95th-Percentile Queue Length [ft/ln]  | 424. | 457. | 440. | 28.47 | 147.58 | 338.32 | 352.52 | 373.03 |

**Movement, Approach, & Intersection Results**

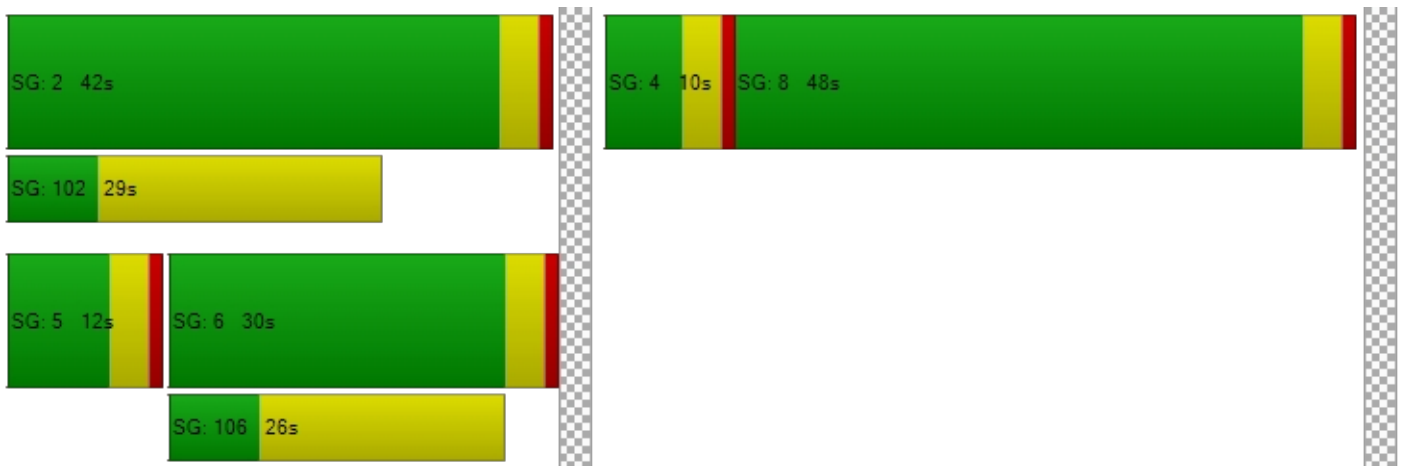
|                                 |       |      |       |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 30.6  | 34.3 | 32.9  | 0.00 | 0.00  | 47.0 | 55.5  | 20.3 | 0.00 | 0.00 | 30.4 | 33.1 |
| Movement LOS                    | C     | C    | C     |      |       | D    | E     | C    |      |      | C    | C    |
| d_A, Approach Delay [s/veh]     | 31.74 |      | 47.02 |      | 22.86 |      | 30.48 |      |      |      |      |      |
| Approach LOS                    | C     |      | D     |      | C     |      | C     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 28.85 |      |       |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | C     |      |       |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.698 |      |       |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 39.64 | 39.64 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.723 | 2.020 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 879   | 120   | 759   | 520   |
| d_b, Bicycle Delay [s]                                     | 15.71 | 44.22 | 19.25 | 27.41 |
| I_b,int, Bicycle LOS Score for Intersection                | 5.099 | 1.560 | 2.480 | 2.291 |
| Bicycle LOS  | F     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 33.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.847 |

**Intersection Setup**

| Name                         | As Ro      |      |      | As Ro      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     |            |      |      |            |      |      |           |      |      |           |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T     |      |      | T T T     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name   | As Ro |      |      | As Ro |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 172   | 241  | 94   | 190   | 382  | 186  | 238   | 219  | 117  | 104   | 182  | 112  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 172   | 241  | 94   | 190   | 382  | 186  | 238   | 219  | 117  | 104   | 182  | 112  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 43    | 60   | 24   | 48    | 96   | 47   | 60    | 549  | 29   | 26    | 455  | 28   |
| Total Analysis Volume [veh/h]                                  | 172   | 241  | 94   | 190   | 382  | 186  | 238   | 219  | 117  | 104   | 182  | 112  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 39   | 0    | 14   | 43   | 0    | 21   | 45   | 0    | 12   | 36   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 28   | 0    | 0    | 29   | 0    | 0    | 26   | 0    | 0    | 25   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | L    | C    | C    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  | 110  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6    | 23   | 23   | 8    | 25   | 25   | 16   | 55   | 55   | 8    | 47   | 47   |
| g / C, Green / Cycle                    | 0.05 | 0.21 | 0.21 | 0.07 | 0.23 | 0.23 | 0.15 | 0.50 | 0.50 | 0.07 | 0.43 | 0.43 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05 | 0.09 | 0.08 | 0.05 | 0.20 | 0.10 | 0.13 | 0.40 | 0.42 | 0.06 | 0.25 | 0.27 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 350  | 190  | 190  | 180  | 380  | 190  | 180  | 570  | 190  |
| c, Capacity [veh/h]                     | 194  | 395  | 395  | 255  | 428  | 428  | 268  | 190  | 952  | 131  | 242  | 808  |
| d1, Uniform Delay [s]                   | 51.6 | 38.0 | 37.7 | 50.0 | 41.3 | 36.6 | 45.9 | 22.8 | 23.4 | 50.2 | 24.2 | 24.7 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.14 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 12.7 | 0.77 | 0.68 | 4.28 | 8.37 | 0.70 | 9.65 | 3.61 | 8.31 | 10.3 | 1.06 | 3.63 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.89 | 0.44 | 0.41 | 0.74 | 0.89 | 0.43 | 0.89 | 0.80 | 0.83 | 0.79 | 0.59 | 0.62 |
| d, Delay for Lane Group [s/veh]       | 64.3 | 38.8 | 38.4 | 54.3 | 49.7 | 37.3 | 55.6 | 26.4 | 31.7 | 60.5 | 25.3 | 28.4 |
| Lane Group LOS                        | E    | D    | D    | D    | D    | D    | E    | C    | C    | E    | C    | C    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.69 | 4.17 | 3.83 | 2.71 | 10.9 | 4.37 | 7.07 | 16.6 | 18.8 | 3.19 | 9.56 | 10.8 |
| 50th-Percentile Queue Length [ft/ln]  | 67.3 | 104. | 95.7 | 67.7 | 273. | 109. | 176. | 415. | 472. | 79.6 | 238. | 272. |
| 95th-Percentile Queue Length [veh/ln] | 4.85 | 7.50 | 6.90 | 4.88 | 16.3 | 7.80 | 11.4 | 23.3 | 26.0 | 5.74 | 14.6 | 16.3 |
| 95th-Percentile Queue Length [ft/ln]  | 121. | 187. | 172. | 121. | 409. | 195. | 285. | 582. | 650. | 143. | 365. | 407. |

**Movement, Approach, & Intersection Results**

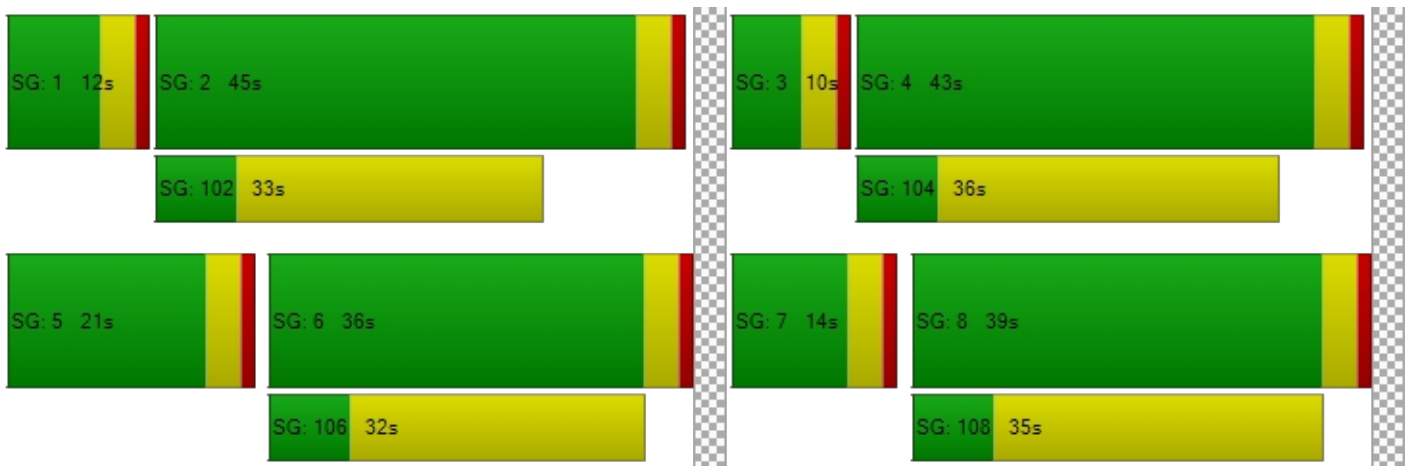
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 64.3  | 38.7 | 38.4 | 54.3  | 49.7 | 37.3 | 55.6  | 28.0 | 31.7 | 60.5  | 26.0 | 28.4 |
| Movement LOS                    | E     | D    | D    | D     | D    | D    | E     | C    | C    | E     | C    | C    |
| d_A, Approach Delay [s/veh]     | 47.36 |      |      | 47.82 |      |      | 30.83 |      |      | 27.90 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 33.44 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.847 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 44.58 | 44.58 | 44.58 | 44.58 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.526 | 2.682 | 3.311 | 3.285 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 636   | 709   | 745   | 582   |
| d_b, Bicycle Delay [s]                                     | 25.59 | 22.94 | 21.66 | 27.68 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.978 | 2.810 | 2.962 | 2.400 |
| Bicycle LOS  | A     | C     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 18.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.737 |

**Intersection Setup**

| Name                         | PI Av      |      |      | Castlegate Lane |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|-----------------|------|------|-----------|------|------|-----------|------|------|
| Approach                     | Northbound |      |      | Southbound      |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           |            |      |      |                 |      |      |           |      |      |           |      |      |
| Turning Movement             | Left       | Thru | Righ | Left            | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0            | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1               | 0    | 0    | 1         | 0    | 1    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.            | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0               | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00            | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00           |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00            |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No              |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes             |      |      | No        |      |      | Yes       |      |      |

**Volumes**

| Name   | PI Av |      |      | Castlegate Lane |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-----------------|------|------|-------|------|------|-------|------|------|
| Base Volume Input [veh/h]                                      | 203   | 14   | 167  | 28              | 33   | 16   | 14    | 217  | 488  | 201   | 175  | 37   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00            | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 203   | 14   | 167  | 28              | 33   | 16   | 14    | 217  | 488  | 201   | 175  | 37   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00            | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 51    | 4    | 42   | 7               | 8    | 4    | 4     | 543  | 122  | 50    | 439  | 9    |
| Total Analysis Volume [veh/h]                                  | 203   | 14   | 167  | 28              | 33   | 16   | 14    | 217  | 488  | 201   | 175  | 37   |
| Presence of On-Street Parking                                  | No    |      | No   | No              |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0               | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0               |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |       |       |       |       |       |       |      |      |      |      |      |      |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0     | 26    | 0     | 0     | 10    | 0     | 10   | 32   | 0    | 22   | 44   | 0    |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0    | 21   | 0    | 0    | 14   | 0    |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |       | No    |       |       | No    |       |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |       | No    |       |       | No    |       | No   | No   |      | No   | No   |      |
| Maximum Recall               |       | No    |       |       | No    |       | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |       | No    |       |       | No    |       | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L     | C     | L    | C    | R    | L    | C    | C    |
|---|------|------|------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90    | 90    | 90   | 90   | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 11   | 11   | 11   | 5     | 5     | 2    | 46   | 46   | 12   | 57   | 57   |
| g / C, Green / Cycle                    | 0.12 | 0.12 | 0.12 | 0.06  | 0.06  | 0.02 | 0.51 | 0.51 | 0.13 | 0.63 | 0.63 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06 | 0.06 | 0.09 | 0.02  | 0.03  | 0.01 | 0.38 | 0.26 | 0.11 | 0.31 | 0.32 |
| s, saturation flow rate [veh/h]         | 180  | 180  | 190  | 1800  | 1900  | 180  | 570  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 211  | 211  | 222  | 105   | 110   | 38   | 292  | 975  | 241  | 238  | 119  |
| d1, Uniform Delay [s]                   | 37.4 | 37.4 | 38.5 | 40.63 | 41.06 | 43.5 | 17.2 | 14.3 | 38.0 | 9.13 | 9.30 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.93 | 1.96 | 5.05 | 1.35  | 2.77  | 5.86 | 1.74 | 1.83 | 7.30 | 0.74 | 1.60 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |       |       |      |      |      |      |      |      |
|---------------------------------------|------|------|------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.51 | 0.52 | 0.75 | 0.27  | 0.44  | 0.37 | 0.74 | 0.50 | 0.83 | 0.50 | 0.52 |
| d, Delay for Lane Group [s/veh]       | 39.3 | 39.3 | 43.5 | 41.98 | 43.83 | 49.4 | 18.9 | 16.2 | 45.3 | 9.87 | 10.9 |
| Lane Group LOS                        | D    | D    | D    | D     | D     | D    | B    | B    | D    | A    | B    |
| Critical Lane Group                   | No   | No   | Yes  | No    | Yes   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.33 | 2.34 | 3.83 | 0.63  | 1.13  | 0.37 | 11.2 | 6.58 | 4.74 | 5.75 | 6.36 |
| 50th-Percentile Queue Length [ft/ln]  | 58.1 | 58.5 | 95.7 | 15.70 | 28.16 | 9.18 | 282. | 164. | 118. | 143. | 159. |
| 95th-Percentile Queue Length [veh/ln] | 4.19 | 4.21 | 6.90 | 1.13  | 2.03  | 0.66 | 16.8 | 10.7 | 8.32 | 9.68 | 10.5 |
| 95th-Percentile Queue Length [ft/ln]  | 104. | 105. | 172. | 28.26 | 50.68 | 16.5 | 420. | 269. | 207. | 242. | 262. |

**Movement, Approach, & Intersection Results**

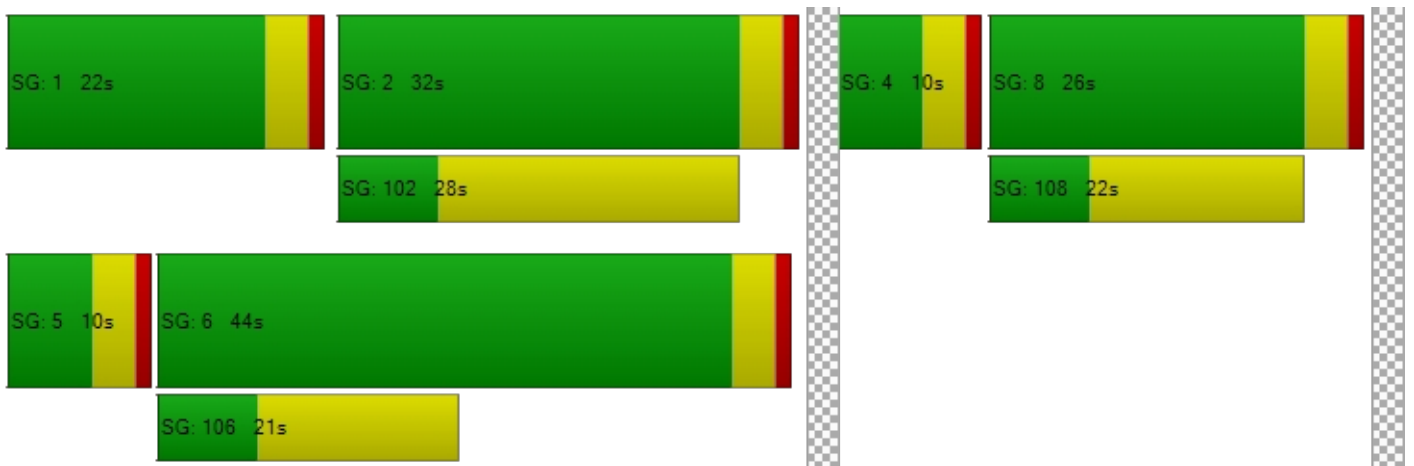
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 39.3  | 39.3 | 43.5 | 41.9  | 43.8 | 43.8 | 49.4  | 18.9 | 16.2 | 45.3  | 10.2 | 10.9 |
| Movement LOS                    | D     | D    | D    | D     | D    | D    | D     | B    | B    | D     | B    | B    |
| d_A, Approach Delay [s/veh]     | 41.20 |      |      | 43.16 |      |      | 18.64 |      |      | 13.77 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | B     |      |      | B     |      |      |
| d_I, Intersection Delay [s/veh] | 18.80 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | B     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.737 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.72 | 34.72 | 0.00  | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.400 | 1.986 | 0.000 | 3.201 |
| Crosswalk LOS  | B     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 488   | 133   | 622   | 888   |
| d_b, Bicycle Delay [s]                                     | 25.73 | 39.24 | 21.40 | 13.92 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.193 | 1.687 | 3.029 | 2.657 |
| Bicycle LOS  | B     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 29.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.710 |

**Intersection Setup**

| Name                         | Kr Bo      |      |      | Kr Bo      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | T T T      |      |      | T T T      |      |      | T T T     |      |      | T T T     |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 1    | 1         | 0    | 0    | 1         | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name   | Kr Bo |      |      | Kr Bo |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 202   | 283  | 99   | 413   | 757  | 149  | 155   | 151  | 276  | 81    | 127  | 101  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 202   | 283  | 99   | 413   | 757  | 149  | 155   | 151  | 276  | 81    | 127  | 101  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 51    | 71   | 25   | 103   | 189  | 37   | 39    | 378  | 69   | 20    | 319  | 25   |
| Total Analysis Volume [veh/h]                                  | 202   | 283  | 99   | 413   | 757  | 149  | 155   | 151  | 276  | 81    | 127  | 101  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 11   | 30   | 0    | 21   | 40   | 0    | 10   | 39   | 0    | 10   | 39   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 19   | 0    | 0    | 19   | 0    | 0    | 26   | 0    | 0    | 28   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | L    | C    | C    | L    | C    | C    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  | 100  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 7    | 16   | 16   | 14   | 23   | 23   | 6    | 48   | 48   | 5    | 48   | 48   |
| g / C, Green / Cycle                    | 0.07 | 0.16 | 0.16 | 0.14 | 0.23 | 0.23 | 0.06 | 0.48 | 0.48 | 0.05 | 0.48 | 0.48 |
| (v / s)_i Volume / Saturation Flow Rate | 0.06 | 0.10 | 0.10 | 0.12 | 0.20 | 0.08 | 0.04 | 0.32 | 0.31 | 0.02 | 0.24 | 0.24 |
| s, saturation flow rate [veh/h]         | 350  | 190  | 190  | 350  | 380  | 190  | 350  | 380  | 190  | 350  | 380  | 190  |
| c, Capacity [veh/h]                     | 248  | 311  | 311  | 492  | 888  | 444  | 213  | 182  | 914  | 191  | 180  | 902  |
| d1, Uniform Delay [s]                   | 45.8 | 39.0 | 38.7 | 41.9 | 36.7 | 31.9 | 46.2 | 19.7 | 19.5 | 45.8 | 18.1 | 18.2 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 6.43 | 2.16 | 1.78 | 3.92 | 2.44 | 0.44 | 4.70 | 1.87 | 3.47 | 1.48 | 1.02 | 2.07 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.82 | 0.64 | 0.59 | 0.84 | 0.85 | 0.34 | 0.73 | 0.66 | 0.64 | 0.42 | 0.51 | 0.51 |
| d, Delay for Lane Group [s/veh]       | 52.3 | 41.2 | 40.5 | 45.8 | 39.1 | 32.3 | 50.9 | 21.5 | 23.0 | 47.2 | 19.1 | 20.3 |
| Lane Group LOS                        | D    | D    | D    | D    | D    | C    | D    | C    | C    | D    | B    | C    |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.68 | 4.70 | 4.29 | 5.19 | 9.01 | 3.03 | 2.02 | 10.5 | 10.6 | 1.01 | 7.28 | 7.65 |
| 50th-Percentile Queue Length [ft/ln]  | 67.0 | 117. | 107. | 129. | 225. | 75.8 | 50.5 | 264. | 266. | 25.2 | 181. | 191. |
| 95th-Percentile Queue Length [veh/ln] | 4.83 | 8.25 | 7.69 | 8.92 | 13.9 | 5.46 | 3.64 | 15.9 | 16.0 | 1.82 | 11.7 | 12.1 |
| 95th-Percentile Queue Length [ft/ln]  | 120. | 206. | 192. | 223. | 348. | 136. | 91.0 | 398. | 400. | 45.4 | 292. | 304. |

**Movement, Approach, & Intersection Results**

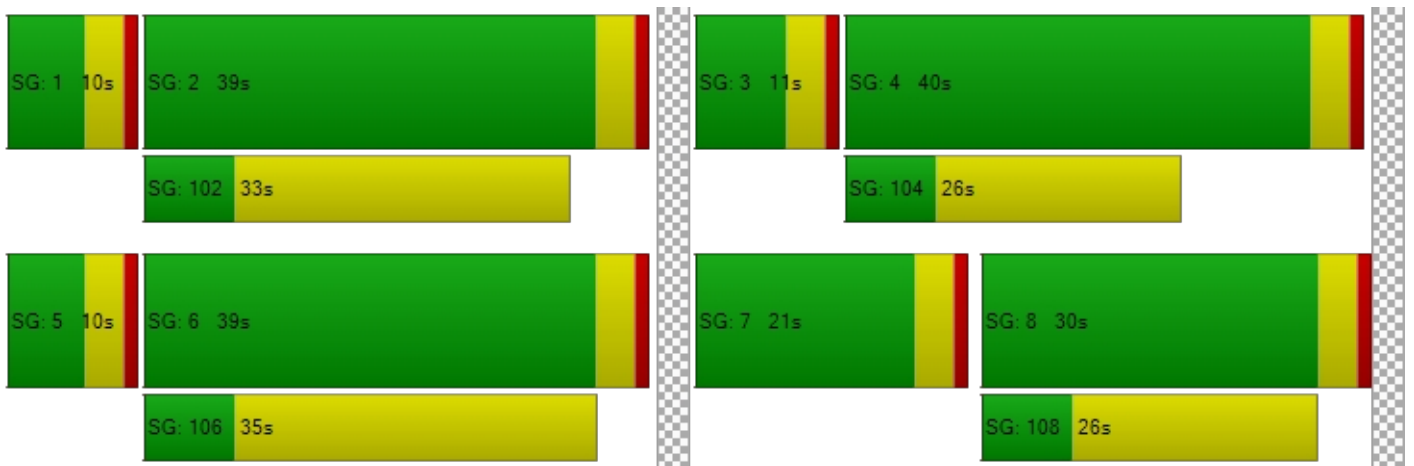
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 52.3  | 41.0 | 40.5 | 45.8  | 39.1 | 32.3 | 50.9  | 21.8 | 23.0 | 47.2  | 19.5 | 20.3 |
| Movement LOS                    | D     | D    | D    | D     | D    | C    | D     | C    | C    | D     | B    | C    |
| d_A, Approach Delay [s/veh]     | 44.84 |      |      | 40.48 |      |      | 24.35 |      |      | 21.11 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | C     |      |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 29.73 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.710 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 39.64 | 39.64 | 39.64 | 39.64 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.734 | 2.858 | 3.165 | 3.155 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 520   | 719   | 700   | 700   |
| d_b, Bicycle Delay [s]                                     | 27.41 | 20.51 | 21.16 | 21.16 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.041 | 2.648 | 2.629 | 2.360 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.622 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Im Hi     |      |      | Im Hi     |      |      |
|------------------------------|------------|------|------|------------|------|------|-----------|------|------|-----------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound |      |      | Westbound |      |      |
| Lane Configuration           | [Diagram]  |      |      | [Diagram]  |      |      | [Diagram] |      |      | [Diagram] |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left      | Thru | Righ | Left      | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 | 12.0      | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1         | 0    | 1    | 1         | 0    | 1    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.      | 100. | 100. | 100.      | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0         | 0    | 0    | 0         | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 | 0.00      | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00     |      |      | 30.00     |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00      |      |      | 0.00      |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No        |      |      | No        |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes       |      |      | Yes       |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Im Hi |      |      | Im Hi |      |      |
|--|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
|  |       |      |      |       |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 151   | 216  | 135  | 318   | 338  | 233  | 212   | 114  | 99   | 133   | 178  | 169  |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 151   | 216  | 135  | 318   | 338  | 233  | 212   | 114  | 99   | 133   | 178  | 169  |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 38    | 54   | 34   | 80    | 85   | 58   | 53    | 287  | 25   | 33    | 446  | 42   |
| Total Analysis Volume [veh/h]                                  | 151   | 216  | 135  | 318   | 338  | 233  | 212   | 114  | 99   | 133   | 178  | 169  |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 11   | 46   | 0    | 21   | 56   | 0    | 13   | 42   | 0    | 11   | 40   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 35   | 0    | 0    | 37   | 0    | 0    | 26   | 0    | 0    | 28   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      | No   |      |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | R    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 7    | 12   | 12   | 13   | 18   | 18   | 9    | 73   | 73   | 6    | 70   | 70   |
| g / C, Green / Cycle                    | 0.06 | 0.10 | 0.10 | 0.11 | 0.15 | 0.15 | 0.08 | 0.61 | 0.61 | 0.05 | 0.59 | 0.59 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.06 | 0.07 | 0.09 | 0.09 | 0.12 | 0.06 | 0.20 | 0.05 | 0.04 | 0.31 | 0.09 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 380  | 190  | 350  | 570  | 190  | 350  | 570  | 190  |
| c, Capacity [veh/h]                     | 207  | 370  | 185  | 383  | 561  | 280  | 265  | 345  | 115  | 190  | 333  | 111  |
| d1, Uniform Delay [s]                   | 55.5 | 51.8 | 52.6 | 52.3 | 47.8 | 49.7 | 54.6 | 11.6 | 9.84 | 55.8 | 15.0 | 11.3 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 4.91 | 1.47 | 5.46 | 4.69 | 1.05 | 6.29 | 5.56 | 0.26 | 0.15 | 4.64 | 0.62 | 0.29 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.73 | 0.58 | 0.73 | 0.83 | 0.60 | 0.83 | 0.80 | 0.33 | 0.09 | 0.70 | 0.54 | 0.15 |
| d, Delay for Lane Group [s/veh]       | 60.4 | 53.3 | 58.1 | 57.0 | 48.9 | 56.0 | 60.1 | 11.9 | 9.99 | 60.4 | 15.7 | 11.6 |
| Lane Group LOS                        | E    | D    | E    | E    | D    | E    | E    | B    | A    | E    | B    | B    |
| Critical Lane Group                   | Yes  | No   | No   | No   | No   | Yes  | Yes  | No   | No   | No   | Yes  | No   |
| 50th-Percentile Queue Length [veh/ln] | 2.39 | 3.19 | 4.24 | 4.94 | 4.82 | 7.27 | 3.36 | 4.98 | 1.12 | 2.10 | 9.67 | 2.12 |
| 50th-Percentile Queue Length [ft/ln]  | 59.7 | 79.8 | 105. | 123. | 120. | 181. | 83.9 | 124. | 27.8 | 52.5 | 241. | 52.9 |
| 95th-Percentile Queue Length [veh/ln] | 4.30 | 5.75 | 7.61 | 8.58 | 8.42 | 11.7 | 6.04 | 8.65 | 2.01 | 3.79 | 14.7 | 3.82 |
| 95th-Percentile Queue Length [ft/ln]  | 107. | 143. | 190. | 214. | 210. | 292. | 151. | 216. | 50.1 | 94.6 | 369. | 95.3 |

**Movement, Approach, & Intersection Results**

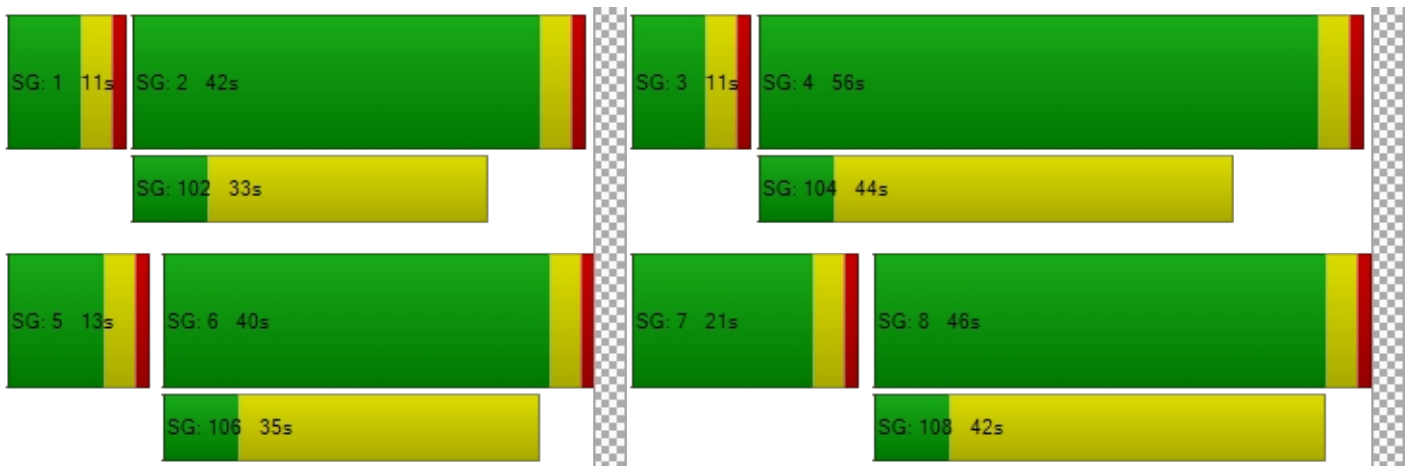
|                                 |       |      |      |       |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|-------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 60.4  | 53.3 | 58.1 | 57.0  | 48.9 | 56.0 | 60.1  | 11.9 | 9.99 | 60.4  | 15.7 | 11.6 |
| Movement LOS                    | E     | D    | E    | E     | D    | E    | E     | B    | A    | E     | B    | B    |
| d_A, Approach Delay [s/veh]     | 56.77 |      |      | 53.69 |      |      | 18.81 |      |      | 18.24 |      |      |
| Approach LOS                    | E     |      |      | D     |      |      | B     |      |      | B     |      |      |
| d_I, Intersection Delay [s/veh] | 28.71 |      |      |       |      |      |       |      |      |       |      |      |
| Intersection LOS                | C     |      |      |       |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.622 |      |      |       |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.757 | 2.815 | 3.256 | 3.263 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 700   | 866   | 633   | 600   |
| d_b, Bicycle Delay [s]                                     | 25.36 | 19.28 | 28.03 | 29.41 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.974 | 2.293 | 2.362 | 2.707 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 251.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.857 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Im Hi      |            |           | Im Hi |      |           |  |
|------------------------------|------------|------|------|------------|------|------|------------|------------|-----------|-------|------|-----------|--|
|                              | Approach   |      |      |            |      |      | Northbound | Southbound | Eastbound |       |      | Westbound |  |
| Lane Configuration           | L L L      |      |      | L L L      |      |      | L L L      |            |           | L L L |      |           |  |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left       | Thru       | Righ      | Left  | Thru | Righ      |  |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0       | 12.0      | 12.0  | 12.0 | 12.0      |  |
| No. of Lanes in Entry Pocket | 1          | 0    | 1    | 1          | 0    | 1    | 1          | 0          | 0         | 1     | 0    | 1         |  |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.       | 100.       | 100.      | 100.  | 100. | 100.      |  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0          | 0         | 0     | 0    | 0         |  |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00       | 0.00      | 0.00  | 0.00 | 0.00      |  |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00      |            |           | 30.00 |      |           |  |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00       |            |           | 0.00  |      |           |  |
| Curb Present                 | No         |      |      | No         |      |      | No         |            |           | No    |      |           |  |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes        |            |           | Yes   |      |           |  |



**Volumes**

| Name   | Rose Drive |      |      | Rose Drive |      |      | Im Hi |      |      | Im Hi |      |      |
|--|------------|------|------|------------|------|------|-------|------|------|-------|------|------|
|  |            |      |      |            |      |      |       |      |      |       |      |      |
| Base Volume Input [veh/h]                                      | 280        | 250  | 160  | 968        | 615  | 38   | 46    | 140  | 277  | 294   | 164  | 619  |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 280        | 250  | 160  | 968        | 615  | 38   | 46    | 140  | 277  | 294   | 164  | 619  |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 70         | 63   | 40   | 242        | 154  | 10   | 12    | 351  | 69   | 74    | 411  | 155  |
| Total Analysis Volume [veh/h]                                  | 280        | 250  | 160  | 968        | 615  | 38   | 46    | 140  | 277  | 294   | 164  | 619  |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No    |      | No   | No    |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0     | 0    | 0    | 0     | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0     |      |      | 0     |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 3    | 8    | 0    | 7    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 15   | 53   | 0    | 12   | 50   | 0    | 10   | 45   | 0    | 10   | 45   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 42   | 0    | 0    | 36   | 0    | 0    | 34   | 0    | 0    | 26   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | R    | L    | C    | R    | L    | C    | C    | L    | C    | R    |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 11   | 25   | 25   | 8    | 22   | 22   | 5    | 65   | 65   | 6    | 66   | 66   |
| g / C, Green / Cycle                    | 0.09 | 0.21 | 0.21 | 0.07 | 0.19 | 0.19 | 0.04 | 0.54 | 0.54 | 0.05 | 0.55 | 0.55 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.07 | 0.08 | 0.28 | 0.16 | 0.02 | 0.03 | 0.30 | 0.29 | 0.08 | 0.29 | 0.33 |
| s, saturation flow rate [veh/h]         | 350  | 380  | 190  | 350  | 380  | 190  | 180  | 380  | 190  | 350  | 570  | 190  |
| c, Capacity [veh/h]                     | 323  | 805  | 403  | 236  | 711  | 355  | 72   | 203  | 102  | 178  | 312  | 104  |
| d1, Uniform Delay [s]                   | 53.7 | 39.9 | 40.7 | 55.9 | 47.3 | 40.4 | 56.7 | 18.3 | 18.1 | 56.9 | 17.2 | 18.2 |
| k, delay calibration                    | 0.11 | 0.11 | 0.11 | 0.12 | 0.11 | 0.11 | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 7.04 | 0.22 | 0.64 | 140  | 3.33 | 0.13 | 9.00 | 1.10 | 2.03 | 300. | 0.64 | 2.51 |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.87 | 0.31 | 0.40 | 4.11 | 0.87 | 0.11 | 0.64 | 0.56 | 0.54 | 1.66 | 0.53 | 0.60 |
| d, Delay for Lane Group [s/veh]       | 60.8 | 40.1 | 41.3 | 145  | 50.6 | 40.6 | 65.7 | 19.4 | 20.1 | 357. | 17.9 | 20.7 |
| Lane Group LOS                        | E    | D    | D    | F    | D    | D    | E    | B    | C    | F    | B    | C    |
| Critical Lane Group                   | No   | No   | Yes  | Yes  | No   | No   | No   | Yes  | No   | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 4.48 | 3.15 | 4.16 | 49.4 | 9.22 | 0.95 | 1.56 | 10.4 | 10.2 | 10.1 | 9.56 | 11.9 |
| 50th-Percentile Queue Length [ft/ln]  | 112. | 78.8 | 103. | 123  | 230. | 23.8 | 38.8 | 260. | 255. | 252. | 239. | 297. |
| 95th-Percentile Queue Length [veh/ln] | 7.96 | 5.68 | 7.49 | 74.6 | 14.2 | 1.71 | 2.80 | 15.7 | 15.4 | 17.1 | 14.6 | 17.5 |
| 95th-Percentile Queue Length [ft/ln]  | 198. | 141. | 187. | 186  | 354. | 42.8 | 70.0 | 392. | 386. | 429. | 365. | 439. |

**Movement, Approach, & Intersection Results**

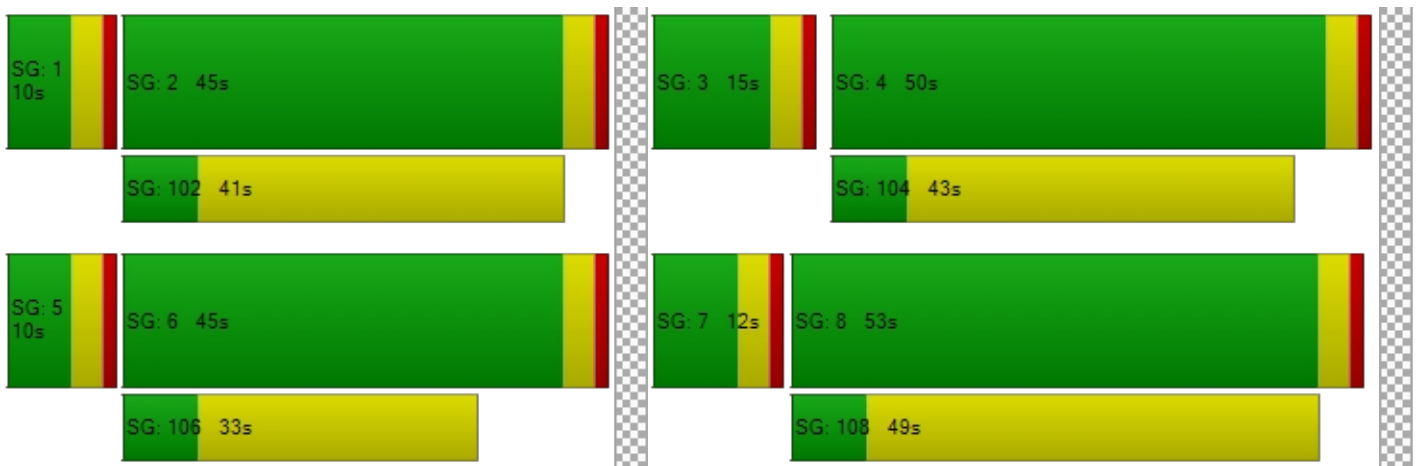
|                                 |        |      |      |        |      |      |       |      |      |       |      |      |
|---------------------------------|--------|------|------|--------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 60.8   | 40.1 | 41.3 | 145    | 50.6 | 40.6 | 65.7  | 19.5 | 20.1 | 357.  | 17.9 | 20.7 |
| Movement LOS                    | E      | D    | D    | F      | D    | D    | E     | B    | C    | F     | B    | C    |
| d_A, Approach Delay [s/veh]     | 48.80  |      |      | 889.91 |      |      | 20.90 |      |      | 57.61 |      |      |
| Approach LOS                    | D      |      |      | F      |      |      | C     |      |      | E     |      |      |
| d_I, Intersection Delay [s/veh] | 251.68 |      |      |        |      |      |       |      |      |       |      |      |
| Intersection LOS                | F      |      |      |        |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.857  |      |      |        |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.869 | 2.961 | 3.121 | 3.414 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 816   | 766   | 683   | 683   |
| d_b, Bicycle Delay [s]                                     | 21.02 | 22.83 | 26.02 | 26.02 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.129 | 2.897 | 2.509 | 2.966 |
| Bicycle LOS  | B     | C     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 24: Driveway A at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.342 |

**Intersection Setup**

| Name                         | Driveway A |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           |            |      |      |            |      |      |              |      |      |              |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | Driveway A |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|  |            |      |      |            |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 90         | 0    | 5    | 22         | 0    | 33   | 11           | 908  | 40   | 2            | 132  | 8    |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 90         | 0    | 5    | 22         | 0    | 33   | 11           | 908  | 40   | 2            | 132  | 8    |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 23         | 0    | 1    | 6          | 0    | 8    | 3            | 227  | 10   | 1            | 330  | 2    |
| Total Analysis Volume [veh/h]                                  | 90         | 0    | 5    | 22         | 0    | 33   | 11           | 908  | 40   | 2            | 132  | 8    |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 58   | 0    | 0    | 58   | 0    | 10   | 22   | 0    | 10   | 22   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 24   | 0    | 0    | 24   | 0    | 0    | 11   | 0    | 0    | 11   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90   | 90   | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6     | 6     | 6     | 6     | 2    | 72   | 72   | 0    | 71   | 71   |
| g / C, Green / Cycle                    | 0.07  | 0.07  | 0.07  | 0.07  | 0.02 | 0.80 | 0.80 | 0.00 | 0.78 | 0.78 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05  | 0.00  | 0.01  | 0.02  | 0.01 | 0.16 | 0.17 | 0.00 | 0.23 | 0.24 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 180  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 137   | 127   | 162   | 127   | 31   | 302  | 151  | 8    | 297  | 148  |
| d1, Uniform Delay [s]                   | 41.26 | 39.30 | 39.68 | 39.89 | 43.7 | 2.26 | 2.27 | 44.6 | 2.77 | 2.81 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.21  | 0.12  | 0.38  | 1.07  | 6.66 | 0.16 | 0.32 | 14.7 | 0.25 | 0.54 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.66  | 0.04  | 0.14  | 0.26  | 0.35 | 0.21 | 0.21 | 0.24 | 0.29 | 0.31 |
| d, Delay for Lane Group [s/veh]       | 46.46 | 39.42 | 40.06 | 40.95 | 50.4 | 2.42 | 2.60 | 59.3 | 3.02 | 3.34 |
| Lane Group LOS                        | D     | D     | D     | D     | D    | A    | A    | E    | A    | A    |
| Critical Lane Group                   | Yes   | No    | No    | No    | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 2.14  | 0.11  | 0.47  | 0.72  | 0.30 | 0.89 | 0.99 | 0.08 | 1.54 | 1.74 |
| 50th-Percentile Queue Length [ft/ln]  | 53.42 | 2.67  | 11.82 | 18.12 | 7.45 | 22.3 | 24.8 | 1.94 | 38.4 | 43.5 |
| 95th-Percentile Queue Length [veh/ln] | 3.85  | 0.19  | 0.85  | 1.30  | 0.54 | 1.61 | 1.79 | 0.14 | 2.76 | 3.14 |
| 95th-Percentile Queue Length [ft/ln]  | 96.16 | 4.81  | 21.27 | 32.61 | 13.4 | 40.1 | 44.7 | 3.49 | 69.1 | 78.4 |



**Movement, Approach, & Intersection Results**

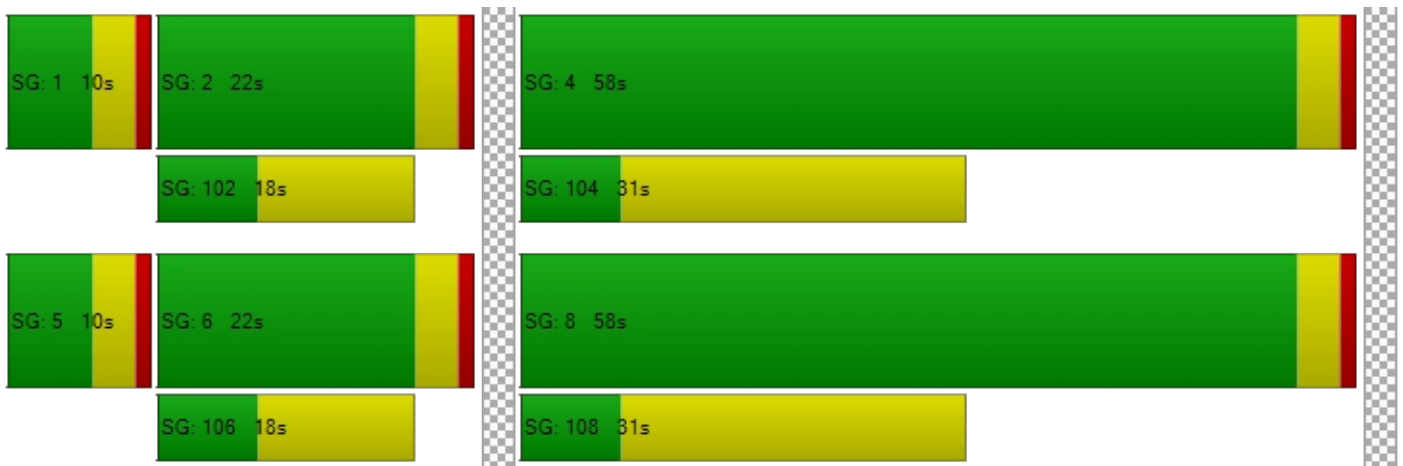
|                                 |       |      |      |       |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 46.4  | 39.4 | 39.4 | 40.0  | 40.9 | 40.9 | 50.4 | 2.47 | 2.60 | 59.3 | 3.13 | 3.34 |
| Movement LOS                    | D     | D    | D    | D     | D    | D    | D    | A    | A    | E    | A    | A    |
| d_A, Approach Delay [s/veh]     | 46.09 |      |      | 40.59 |      |      | 3.03 |      | 3.21 |      |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | A    |      | A    |      |      |      |
| d_I, Intersection Delay [s/veh] | 5.65  |      |      |       |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |      |       |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.342 |      |      |       |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.68 | 34.68 | 34.68 | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.984 | 1.964 | 3.056 | 2.940 |
| Crosswalk LOS  | A     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1200  | 1200  | 400   | 400   |
| d_b, Bicycle Delay [s]                                     | 7.21  | 7.21  | 28.81 | 28.81 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.716 | 1.650 | 2.087 | 2.292 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**





|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 9.3   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.692 |

**Intersection Setup**

| Name                         | Va Av  |      |      | Va Av   |      |      | Driveway B  |      |      | Driveway B  |      |      |
|------------------------------|--|------|------|---|------|------|---|------|------|---|------|------|
|                              | Northbound   |      |      | Southbound  |      |      | Eastbound   |      |      | Westbound   |      |      |
| Approach                     | Northbound   |      |      | Southbound  |      |      | Eastbound   |      |      | Westbound   |      |      |
| Lane Configuration           |  |      |      |  |      |      |  |      |      |  |      |      |
| Turning Movement             | Left   | Thru | Righ | Left  | Thru | Righ | Left  | Thru | Righ | Left  | Thru | Righ |
| Lane Width [ft]              | 12.0   | 12.0 | 12.0 | 12.0  | 12.0 | 12.0 | 12.0  | 12.0 | 12.0 | 12.0  | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1  | 0    | 0    | 1   | 0    | 0    | 1   | 0    | 0    | 1   | 0    | 0    |
| Entry Pocket Length [ft]     | 100.   | 100. | 100. | 100.  | 100. | 100. | 100.  | 100. | 100. | 100.  | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0  | 0    | 0    | 0   | 0    | 0    | 0   | 0    | 0    | 0   | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00   | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Speed [mph]                  | 45.00  |      |      | 45.00   |      |      | 25.00   |      |      | 25.00   |      |      |
| Grade [%]                    | 0.00   |      |      | 0.00  |      |      | 0.00  |      |      | 0.00  |      |      |
| Curb Present                 | No   |      |      | No  |      |      | No  |      |      | No  |      |      |
| Crosswalk                    | Yes  |      |      | Yes   |      |      | Yes   |      |      | Yes   |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Driveway B |      |      | Driveway B |      |      |
|--|-------|------|------|-------|------|------|------------|------|------|------------|------|------|
|  |       |      |      |       |      |      |            |      |      |            |      |      |
| Base Volume Input [veh/h]                                      | 33    | 727  | 13   | 13    | 209  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 33    | 727  | 13   | 13    | 209  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 8     | 182  | 3    | 3     | 525  | 1    | 1          | 0    | 18   | 9          | 0    | 9    |
| Total Analysis Volume [veh/h]                                  | 33    | 727  | 13   | 13    | 209  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No         |      | No   | No         |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 1    | 6    | 0    | 5    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 60   | 0    | 10   | 60   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 11   | 0    | 0    | 18   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L     | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100  | 100  | 100  | 100  | 100  | 100  | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00  | 0.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4    | 81   | 81   | 2    | 79   | 79   | 5     | 5     | 5     | 5     |
| g / C, Green / Cycle                    | 0.04 | 0.81 | 0.81 | 0.02 | 0.79 | 0.79 | 0.05  | 0.05  | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.20 | 0.19 | 0.01 | 0.55 | 0.55 | 0.00  | 0.04  | 0.02  | 0.02  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 1800  | 1900  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 66   | 153  | 153  | 34   | 150  | 150  | 102   | 100   | 75    | 100   |
| d1, Uniform Delay [s]                   | 47.2 | 2.28 | 2.28 | 48.5 | 4.90 | 4.90 | 44.94 | 46.60 | 45.78 | 45.73 |
| k, delay calibration                    | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.81 | 0.37 | 0.37 | 7.05 | 2.73 | 2.73 | 0.12  | 8.80  | 4.77  | 2.15  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |       |       |       |       |
|---------------------------------------|------|------|------|------|------|------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.50 | 0.24 | 0.24 | 0.39 | 0.70 | 0.70 | 0.03  | 0.71  | 0.48  | 0.36  |
| d, Delay for Lane Group [s/veh]       | 53.0 | 2.65 | 2.65 | 55.5 | 7.63 | 7.63 | 45.05 | 55.40 | 50.55 | 47.88 |
| Lane Group LOS                        | D    | A    | A    | E    | A    | A    | D     | E     | D     | D     |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No    | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.89 | 0.96 | 0.95 | 0.38 | 6.39 | 6.39 | 0.07  | 1.99  | 0.97  | 0.93  |
| 50th-Percentile Queue Length [ft/ln]  | 22.1 | 24.0 | 23.8 | 9.41 | 159. | 159. | 1.86  | 49.75 | 24.20 | 23.21 |
| 95th-Percentile Queue Length [veh/ln] | 1.60 | 1.73 | 1.72 | 0.68 | 10.5 | 10.5 | 0.13  | 3.58  | 1.74  | 1.67  |
| 95th-Percentile Queue Length [ft/ln]  | 39.8 | 43.2 | 42.9 | 16.9 | 263. | 263. | 3.35  | 89.56 | 43.56 | 41.77 |

**Movement, Approach, & Intersection Results**

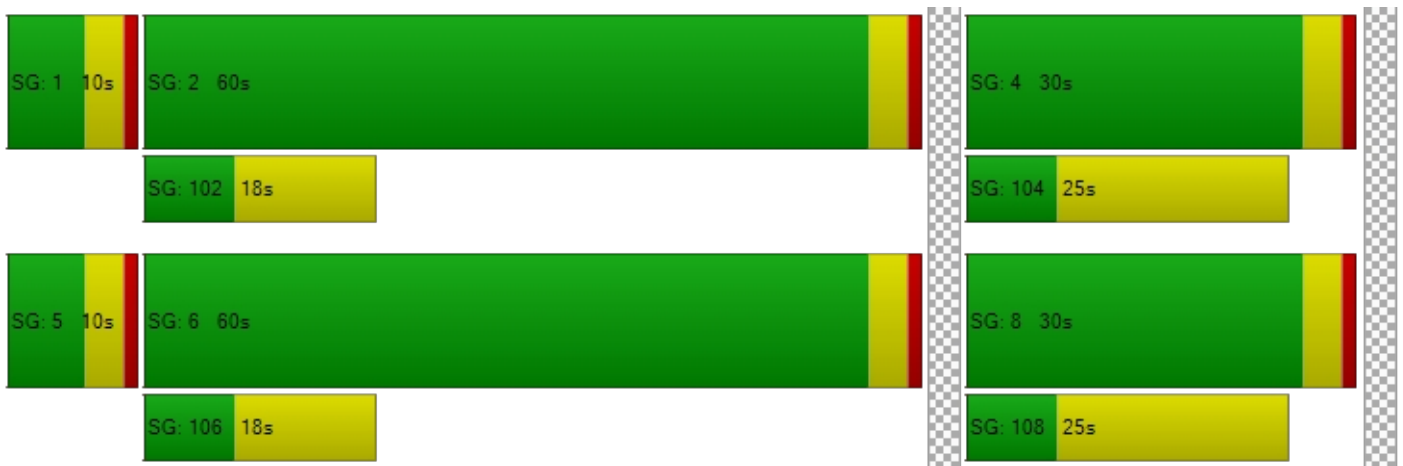
|                                 |       |      |      |      |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 53.0  | 2.65 | 2.65 | 55.5 | 7.63 | 7.63 | 45.0  | 55.4 | 55.4 | 50.5  | 47.8 | 47.8 |
| Movement LOS                    | D     | A    | A    | E    | A    | A    | D     | E    | E    | D     | D    | D    |
| d_A, Approach Delay [s/veh]     | 4.80  |      |      | 7.93 |      |      | 54.98 |      |      | 49.21 |      |      |
| Approach LOS                    | A     |      |      | A    |      |      | D     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 9.26  |      |      |      |      |      |       |      |      |       |      |      |
| Intersection LOS                | A     |      |      |      |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.692 |      |      |      |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 39.61 | 39.61 | 39.61 | 39.61 |
| I_p,int, Pedestrian LOS Score for Intersection             | 3.227 | 3.151 | 1.975 | 1.972 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1120  | 1120  | 520   | 520   |
| d_b, Bicycle Delay [s]                                     | 9.68  | 9.68  | 27.38 | 27.38 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.197 | 3.304 | 1.682 | 1.678 |
| Bicycle LOS  | B     | C     | A     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 3.8   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.444 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           | T          |        | T          |        | T T        |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 40.00      |        | 40.00      |        | 25.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Curb Present                 | No         |        | No         |        | No         |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name   | Rose Drive |        | Rose Drive |        | Driveway C |        |
|--|------------|--------|------------|--------|------------|--------|
|  |            |        |            |        |            |        |
| Base Volume Input [veh/h]                                      | 818        | 14     | 23         | 1406   | 41         | 66     |
| Base Volume Adjustment Factor                                  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                                      | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]   | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]  | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]   | 0          | 0      | 0          | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]                               | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                                    | 818        | 14     | 23         | 1406   | 41         | 66     |
| Peak Hour Factor   | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]                                 | 205        | 4      | 6          | 352    | 10         | 17     |
| Total Analysis Volume [veh/h]                                  | 818        | 14     | 23         | 1406   | 41         | 66     |
| Presence of On-Street Parking                                  | No         | No     | No         | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0      | 0          | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                                   | 0          | 0      | 0          | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |        | 0          |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |        | 0          |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |        | 0          |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |        | 0          |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]                                    | 0          |        | 0          |        | 0          |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissiv | Permissiv | Permissiv | Permissiv | Split | Split |
|------------------------------|-----------|-----------|-----------|-----------|-------|-------|
| Signal Group                 | 6         | 0         | 0         | 2         | 7     | 0     |
| Auxiliary Signal Groups      |           |           |           |           |       |       |
| Lead / Lag                   | -         | -         | -         | -         | Lead  | -     |
| Minimum Green [s]            | 6         | 0         | 0         | 6         | 6     | 0     |
| Maximum Green [s]            | 30        | 0         | 0         | 30        | 30    | 0     |
| Amber [s]                    | 3.0       | 0.0       | 0.0       | 3.0       | 3.0   | 0.0   |
| All red [s]                  | 1.0       | 0.0       | 0.0       | 1.0       | 1.0   | 0.0   |
| Split [s]                    | 61        | 0         | 0         | 61        | 29    | 0     |
| Vehicle Extension [s]        | 3.0       | 0.0       | 0.0       | 3.0       | 3.0   | 0.0   |
| Walk [s]                     | 7         | 0         | 0         | 0         | 7     | 0     |
| Pedestrian Clearance [s]     | 11        | 0         | 0         | 0         | 18    | 0     |
| Delayed Vehicle Green [s]    | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| Rest In Walk                 | No        |           |           | No        | No    |       |
| I1, Start-Up Lost Time [s]   | 2.0       | 0.0       | 0.0       | 2.0       | 2.0   | 0.0   |
| I2, Clearance Lost Time [s]  | 2.0       | 0.0       | 0.0       | 2.0       | 2.0   | 0.0   |
| Minimum Recall               | No        |           |           | No        | No    |       |
| Maximum Recall               | No        |           |           | No        | No    |       |
| Pedestrian Recall            | No        |           |           | No        | No    |       |
| Detector Location [ft]       | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| Detector Length [ft]         | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| I, Upstream Filtering Factor | 1.00      | 1.00      | 1.00      | 1.00      | 1.00  | 1.00  |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C    | C    | L    | C    | L     | R     |
|---|------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90   | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 2.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 76   | 76   | 76   | 76   | 6     | 6     |
| g / C, Green / Cycle                    | 0.85 | 0.85 | 0.85 | 0.85 | 0.06  | 0.06  |
| (v / s)_i Volume / Saturation Flow Rate | 0.22 | 0.22 | 0.01 | 0.37 | 0.02  | 0.03  |
| s, saturation flow rate [veh/h]         | 1900 | 1900 | 1800 | 3800 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 1611 | 1611 | 1473 | 3222 | 114   | 120   |
| d1, Uniform Delay [s]                   | 1.33 | 1.33 | 1.05 | 1.65 | 40.38 | 40.88 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.39 | 0.39 | 0.02 | 0.43 | 1.92  | 3.90  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |      |       |       |       |
|---------------------------------------|-------|-------|------|-------|-------|-------|
| X, volume / capacity                  | 0.26  | 0.26  | 0.02 | 0.44  | 0.36  | 0.55  |
| d, Delay for Lane Group [s/veh]       | 1.72  | 1.72  | 1.07 | 2.08  | 42.30 | 44.78 |
| Lane Group LOS                        | A     | A     | A    | A     | D     | D     |
| Critical Lane Group                   | No    | No    | No   | Yes   | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.41  | 0.41  | 0.02 | 0.69  | 0.93  | 1.55  |
| 50th-Percentile Queue Length [ft/ln]  | 10.32 | 10.32 | 0.46 | 17.34 | 23.30 | 38.74 |
| 95th-Percentile Queue Length [veh/ln] | 0.74  | 0.74  | 0.03 | 1.25  | 1.68  | 2.79  |
| 95th-Percentile Queue Length [ft/ln]  | 18.57 | 18.57 | 0.83 | 31.21 | 41.93 | 69.73 |

**Movement, Approach, & Intersection Results**

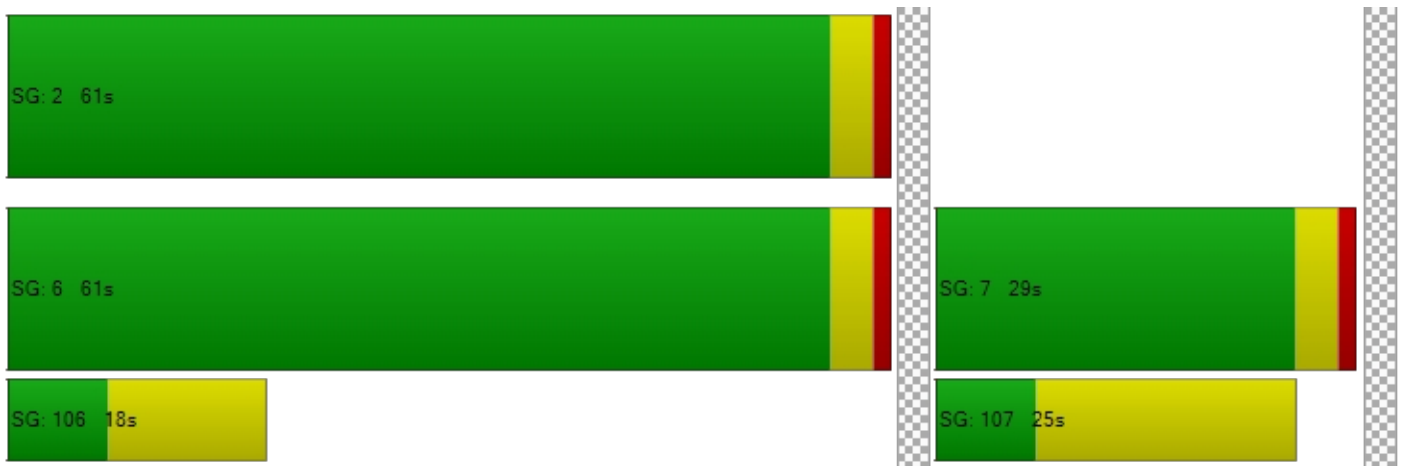
|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 1.72  | 1.72 | 1.07 | 2.08 | 42.30 | 44.78 |
| Movement LOS                    | A     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 1.72  |      | 2.07 |      | 43.83 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 3.83  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.444 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 0.0   | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 0.00  | 34.65 | 34.65 |
| I_p,int, Pedestrian LOS Score for Intersection             | 0.000 | 2.901 | 2.011 |
| Crosswalk LOS  | F     | C     | B     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1267  | 1267  | 556   |
| d_b, Bicycle Delay [s]                                     | 6.04  | 6.04  | 23.45 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.246 | 2.739 | 1.560 |
| Bicycle LOS  | B     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 1: State College Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 42.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.885 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T T      |        |        | T T T T      |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                         |        |        |                         |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 368                     | 688    | 353    | 637                     | 461    | 17     | 44           | 1694   | 302    | 457          | 1361   | 801    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 368                     | 688    | 353    | 637                     | 461    | 17     | 44           | 1694   | 302    | 457          | 1361   | 801    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 92                      | 172    | 88     | 159                     | 115    | 4      | 11           | 424    | 76     | 114          | 340    | 200    |
| Total Analysis Volume [veh/h]               | 368                     | 688    | 353    | 637                     | 461    | 17     | 44           | 1694   | 302    | 457          | 1361   | 801    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 17       | 34      | 0       | 27       | 44      | 0       | 11       | 39      | 0       | 20       | 48      | 48      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 0       | 0       | 0        | 33      | 0       | 0        | 28      | 0       | 0        | 22      | 22      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  |
| g_i, Effective Green Time [s]           | 13    | 26    | 26    | 26    | 23    | 36    | 36    | 5     | 39    | 39    | 16    | 50    | 77    |
| g / C, Green / Cycle                    | 0.11  | 0.22  | 0.22  | 0.22  | 0.19  | 0.30  | 0.30  | 0.04  | 0.33  | 0.33  | 0.13  | 0.42  | 0.65  |
| (v / s)_i Volume / Saturation Flow Rate | 0.11  | 0.19  | 0.19  | 0.17  | 0.18  | 0.13  | 0.13  | 0.01  | 0.26  | 0.26  | 0.13  | 0.24  | 0.42  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 5700  | 1900  | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 381   | 410   | 410   | 410   | 671   | 568   | 568   | 138   | 1854  | 618   | 468   | 2392  | 1225  |
| d1, Uniform Delay [s]                   | 53.28 | 45.63 | 45.49 | 44.33 | 47.94 | 33.78 | 33.72 | 56.11 | 37.09 | 37.02 | 51.82 | 26.56 | 13.10 |
| k, delay calibration                    | 0.11  | 0.28  | 0.27  | 0.21  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 14.78 | 14.76 | 13.38 | 6.02  | 7.99  | 0.50  | 0.49  | 1.32  | 3.92  | 10.69 | 14.53 | 0.99  | 2.73  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |       |        |        |        |       |        |        |        |        |        |
|---------------------------------------|-------|-------|-------|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.97  | 0.89  | 0.87  | 0.78  | 0.95   | 0.42   | 0.42   | 0.32  | 0.81   | 0.80   | 0.98   | 0.57   | 0.65   |
| d, Delay for Lane Group [s/veh]       | 68.06 | 60.39 | 58.87 | 50.35 | 55.93  | 34.28  | 34.21  | 57.43 | 41.01  | 47.70  | 66.35  | 27.55  | 15.83  |
| Lane Group LOS                        | E     | E     | E     | D     | E      | C      | C      | E     | D      | D      | E      | C      | B      |
| Critical Lane Group                   | No    | Yes   | No    | No    | Yes    | No     | No     | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 6.30  | 12.14 | 11.81 | 9.59  | 10.11  | 5.72   | 5.64   | 0.67  | 13.96  | 15.03  | 7.78   | 10.02  | 13.32  |
| 50th-Percentile Queue Length [ft/ln]  | 157.5 | 303.5 | 295.2 | 239.7 | 252.87 | 142.98 | 140.97 | 16.87 | 349.09 | 375.82 | 194.48 | 250.56 | 332.93 |
| 95th-Percentile Queue Length [veh/ln] | 10.42 | 17.85 | 17.45 | 14.67 | 15.33  | 9.64   | 9.53   | 1.21  | 20.09  | 21.39  | 12.35  | 15.21  | 19.30  |
| 95th-Percentile Queue Length [ft/ln]  | 260.4 | 446.3 | 436.1 | 366.7 | 383.27 | 241.03 | 238.33 | 30.37 | 502.30 | 534.78 | 308.84 | 380.36 | 482.55 |

**Movement, Approach, & Intersection Results**

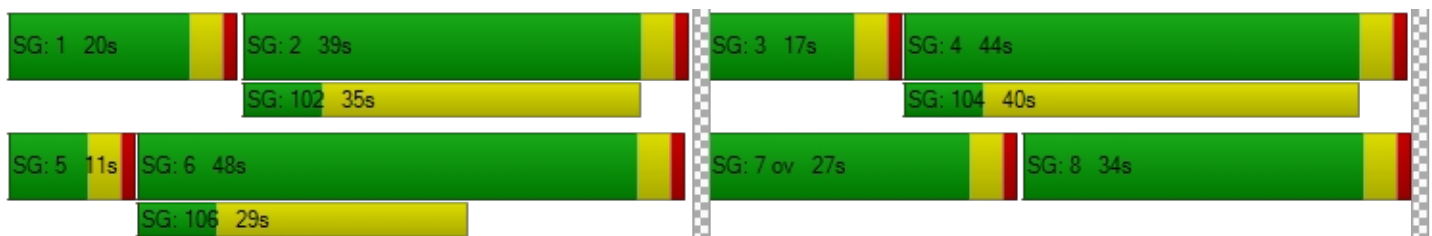
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 68.06 | 59.67 | 50.52 | 55.93 | 34.25 | 34.21 | 57.43 | 41.78 | 47.70 | 66.35 | 27.55 | 15.83 |
| Movement LOS                    | E     | E     | D     | E     | C     | C     | E     | D     | D     | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 59.74 |       |       | 46.63 |       |       | 42.99 |       |       | 30.74 |       |       |
| Approach LOS                    | E     |       |       | D     |       |       | D     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 42.37 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.885 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.974 | 2.897 | 3.273 | 0.000 |
| Crosswalk LOS  | C     | C     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 500   | 666   | 583   | 733   |
| d_b, Bicycle Delay [s]                                   | 33.76 | 26.68 | 30.12 | 24.08 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.722 | 2.479 | 2.401 | 3.000 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |








**Intersection Level Of Service Report**  
**Intersection 2: SR-57 SB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 19.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.668 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | SR-57 SB Ramps  |        |        | Lambert Road  |        |        | Lambert Road  |        |        |
|------------------------------|----------------|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound     |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |                |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1   | 0      | 1      | 0   | 0      | 1      | 1   | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 |                |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes            |        |        | Yes   |        |        | No  |        |        | No  |        |        |

**Volumes**

| Name  | SR-57 SB Ramps |        |        | SR-57 SB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 0              | 0      | 0      | 547            | 0      | 897    | 0            | 1516   | 877    | 270          | 1838   | 0      |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0              | 0      | 0      | 547            | 0      | 897    | 0            | 1516   | 877    | 270          | 1838   | 0      |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0              | 0      | 0      | 137            | 0      | 224    | 0            | 379    | 219    | 68           | 460    | 0      |
| Total Analysis Volume [veh/h]               | 0              | 0      | 0      | 547            | 0      | 897    | 0            | 1516   | 877    | 270          | 1838   | 0      |
| Presence of On-Street Parking               |                |        |        | No             |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 45    | 0       | 0     | 0       | 32      | 0       | 13       | 45      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 12      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              |  | L     | R     | C     | R     | L     | C    |
|---|--|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     |  | 90    | 90    | 90    | 90    | 90    | 90   |
| L, Total Lost Time per Cycle [s]        |  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             |  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 |
| g_i, Effective Green Time [s]           |  | 27    | 27    | 42    | 42    | 9     | 55   |
| g / C, Green / Cycle                    |  | 0.30  | 0.30  | 0.47  | 0.47  | 0.10  | 0.61 |
| (v / s)_i Volume / Saturation Flow Rate |  | 0.16  | 0.24  | 0.27  | 0.23  | 0.08  | 0.32 |
| s, saturation flow rate [veh/h]         |  | 3500  | 3800  | 5700  | 3800  | 3500  | 5700 |
| c, Capacity [veh/h]                     |  | 1039  | 1129  | 2686  | 1791  | 345   | 3501 |
| d1, Uniform Delay [s]                   |  | 26.37 | 29.13 | 17.14 | 16.36 | 39.65 | 9.89 |
| k, delay calibration                    |  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50 |
| l, Upstream Filtering Factor            |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               |  | 0.41  | 1.32  | 0.86  | 0.96  | 3.93  | 0.57 |
| d3, Initial Queue Delay [s]             |  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  |  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |  |        |        |        |        |        |        |
|---------------------------------------|--|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  |  | 0.53   | 0.79   | 0.56   | 0.49   | 0.78   | 0.53   |
| d, Delay for Lane Group [s/veh]       |  | 26.79  | 30.44  | 18.01  | 17.32  | 43.58  | 10.46  |
| Lane Group LOS                        |  | C      | C      | B      | B      | D      | B      |
| Critical Lane Group                   |  | No     | Yes    | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] |  | 4.82   | 8.84   | 7.32   | 6.12   | 3.07   | 6.30   |
| 50th-Percentile Queue Length [ft/ln]  |  | 120.62 | 220.90 | 183.07 | 153.12 | 76.64  | 157.44 |
| 95th-Percentile Queue Length [veh/ln] |  | 8.43   | 13.71  | 11.76  | 10.18  | 5.52   | 10.41  |
| 95th-Percentile Queue Length [ft/ln]  |  | 210.68 | 342.77 | 294.02 | 254.59 | 137.94 | 260.32 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |       |       |       |       |       |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 26.79 | 0.00 | 30.44 | 0.00  | 18.01 | 17.32 | 43.58 | 10.46 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | B     | B     | D     | B     |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 29.06 |      |       | 17.76 |       |       | 14.70 |       |      |
| Approach LOS                    | A     |      |      | C     |      |       | B     |       |       | B     |       |      |
| d_I, Intersection Delay [s/veh] | 19.42 |      |      |       |      |       |       |       |       |       |       |      |
| Intersection LOS                | B     |      |      |       |      |       |       |       |       |       |       |      |
| Intersection V/C                | 0.668 |      |      |       |      |       |       |       |       |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.274 | 2.483 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 911   | 622   | 911   |
| d_b, Bicycle Delay [s]                                   | 45.01 | 13.35 | 21.37 | 13.35 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 1.560 | 2.876 | 2.719 |
| Bicycle LOS  | D     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 3: SR-57 NB Ramps at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 13.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.559 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound     |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐            |        |        |                |        |        | ⇐⇐⇐          |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left           | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0              | 0      | 0      | 1            | 0      | 1      | 0            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00          |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00           |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No             |        |        |                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes            |        |        | No             |        |        | No           |        |        | No           |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | SR-57 NB Ramps |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|----------------|--------|--------|----------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                |        |        |                |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 710            | 0      | 330    | 0              | 0      | 0      | 0            | 1724   | 605    | 0            | 1215   | 573    |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 710            | 0      | 330    | 0              | 0      | 0      | 0            | 1724   | 605    | 0            | 1215   | 573    |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h]              | 178            | 0      | 83     | 0              | 0      | 0      | 0            | 431    | 151    | 0            | 304    | 0      |
| Total Analysis Volume [veh/h]               | 710            | 0      | 330    | 0              | 0      | 0      | 0            | 1724   | 605    | 0            | 1215   | 0      |
| Presence of On-Street Parking               | No             |        | No     |                |        |        | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0              | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0              |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Split | Permiss | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Unsigna |
|------------------------------|-------|---------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 3     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |         |       |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag                   | Lead  | -       | -     | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 6     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 30    | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 54    | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 36      | 0       | 0       | 36      | 0       |
| Vehicle Extension [s]        | 3.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 7       | 0       | 0       | 0       | 0       |
| Pedestrian Clearance [s]     | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 0       | 25      | 0       | 0       | 0       | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Maximum Recall               | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Pedestrian Recall            | No    |         |       |         |         |         |         |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | R     |  | C    | C    | R    | C    |
|---|-------|-------|--|------|------|------|------|
| C, Cycle Length [s]                     | 90    | 90    |  | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  |  | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  |  | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 22    | 22    |  | 59   | 59   | 59   | 59   |
| g / C, Green / Cycle                    | 0.25  | 0.25  |  | 0.66 | 0.66 | 0.66 | 0.66 |
| (v / s)_i Volume / Saturation Flow Rate | 0.20  | 0.17  |  | 0.31 | 0.31 | 0.31 | 0.21 |
| s, saturation flow rate [veh/h]         | 3500  | 1900  |  | 3800 | 1900 | 1900 | 5700 |
| c, Capacity [veh/h]                     | 872   | 473   |  | 2515 | 1257 | 1257 | 3772 |
| d1, Uniform Delay [s]                   | 31.76 | 30.64 |  | 7.41 | 7.41 | 7.41 | 6.53 |
| k, delay calibration                    | 0.11  | 0.11  |  | 0.50 | 0.50 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.91  | 1.87  |  | 0.62 | 1.23 | 1.23 | 0.23 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  |  | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  |  | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |  |        |        |        |        |
|---------------------------------------|--------|--------|--|--------|--------|--------|--------|
| X, volume / capacity                  | 0.81   | 0.70   |  | 0.46   | 0.46   | 0.46   | 0.32   |
| d, Delay for Lane Group [s/veh]       | 33.68  | 32.51  |  | 8.02   | 8.64   | 8.64   | 6.76   |
| Lane Group LOS                        | C      | C      |  | A      | A      | A      | A      |
| Critical Lane Group                   | Yes    | No     |  | Yes    | No     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 7.29   | 6.58   |  | 4.89   | 5.11   | 5.11   | 2.95   |
| 50th-Percentile Queue Length [ft/ln]  | 182.32 | 164.44 |  | 122.35 | 127.70 | 127.70 | 73.70  |
| 95th-Percentile Queue Length [veh/ln] | 11.72  | 10.78  |  | 8.52   | 8.81   | 8.81   | 5.31   |
| 95th-Percentile Queue Length [ft/ln]  | 293.04 | 269.60 |  | 213.06 | 220.37 | 220.37 | 132.66 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 33.68 | 0.00 | 32.51 | 0.00 | 0.00 | 0.00 | 0.00 | 8.08 | 8.64 | 0.00 | 6.76 | 0.00 |
| Movement LOS                    | C     |      | C     |      |      |      |      | A    | A    |      | A    |      |
| d_A, Approach Delay [s/veh]     | 33.31 |      |       | 0.00 |      |      | 8.33 |      |      | 6.76 |      |      |
| Approach LOS                    | C     |      |       | A    |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 13.58 |      |       |      |      |      |      |      |      |      |      |      |
| Intersection LOS                | B     |      |       |      |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.559 |      |       |      |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.63 | 0.00  | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.620 | 0.000 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | F     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1112  | 0     | 712   | 712   |
| d_b, Bicycle Delay [s]                                   | 8.86  | 44.96 | 18.65 | 18.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.560 | 4.132 | 2.841 | 2.228 |
| Bicycle LOS  | A     | D     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 4: Pointe Drive at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 15.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.629 |

**Intersection Setup**

| Name                         | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound   |        |        | Southbound   |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | +            |        |        | +            |        |        | +            |        |        | +            |        |        |
| Turning Movement             | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0            | 0      | 0      | 0            | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No           |        |        | No           |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes          |        |        | Yes          |        |        | No           |        |        | Yes          |        |        |

**Volumes**

| Name  | Pointe Drive |        |        | Pointe Drive |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |              |        |        |              |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 130          | 0      | 32     | 126          | 0      | 469    | 214          | 2238   | 44     | 17           | 1747   | 63     |
| Base Volume Adjustment Factor               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 130          | 0      | 32     | 126          | 0      | 469    | 214          | 2238   | 44     | 17           | 1747   | 63     |
| Peak Hour Factor                            | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 33           | 0      | 8      | 32           | 0      | 117    | 54           | 560    | 11     | 4            | 437    | 16     |
| Total Analysis Volume [veh/h]               | 130          | 0      | 32     | 126          | 0      | 469    | 214          | 2238   | 44     | 17           | 1747   | 63     |
| Presence of On-Street Parking               | No           |        | No     | No           |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0            |        |        | 0            |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 48      | 0       | 0       | 48      | 0       | 11       | 32      | 0       | 10       | 31      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 33      | 0       | 0       | 0       | 0       | 0        | 14      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | C     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90   | 90   | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 14    | 14    | 14    | 7     | 62   | 62   | 2     | 57   | 57   |
| g / C, Green / Cycle                    | 0.16  | 0.16  | 0.16  | 0.08  | 0.69 | 0.69 | 0.02  | 0.63 | 0.63 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.07  | 0.12  | 0.06  | 0.39 | 0.41 | 0.01  | 0.31 | 0.32 |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 3800  | 3500  | 3800 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 356   | 364   | 600   | 276   | 2601 | 1300 | 44    | 2394 | 1197 |
| d1, Uniform Delay [s]                   | 35.08 | 34.32 | 36.41 | 40.70 | 7.41 | 7.63 | 43.27 | 8.99 | 9.12 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.91  | 0.56  | 2.26  | 4.69  | 0.94 | 2.07 | 5.51  | 0.75 | 1.59 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.45   | 0.35   | 0.78   | 0.78   | 0.58   | 0.60   | 0.39  | 0.50   | 0.52   |
| d, Delay for Lane Group [s/veh]       | 35.98  | 34.89  | 38.67  | 45.39  | 8.34   | 9.70   | 48.78 | 9.73   | 10.71  |
| Lane Group LOS                        | D      | C      | D      | D      | A      | A      | D     | A      | B      |
| Critical Lane Group                   | No     | No     | Yes    | No     | No     | Yes    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.33   | 2.52   | 5.05   | 2.48   | 6.51   | 7.40   | 0.44  | 5.77   | 6.32   |
| 50th-Percentile Queue Length [ft/ln]  | 83.14  | 62.99  | 126.27 | 61.94  | 162.76 | 184.91 | 10.91 | 144.36 | 158.08 |
| 95th-Percentile Queue Length [veh/ln] | 5.99   | 4.54   | 8.74   | 4.46   | 10.70  | 11.86  | 0.79  | 9.72   | 10.45  |
| 95th-Percentile Queue Length [ft/ln]  | 149.65 | 113.38 | 218.42 | 111.49 | 267.38 | 296.42 | 19.65 | 242.88 | 261.18 |

**Movement, Approach, & Intersection Results**

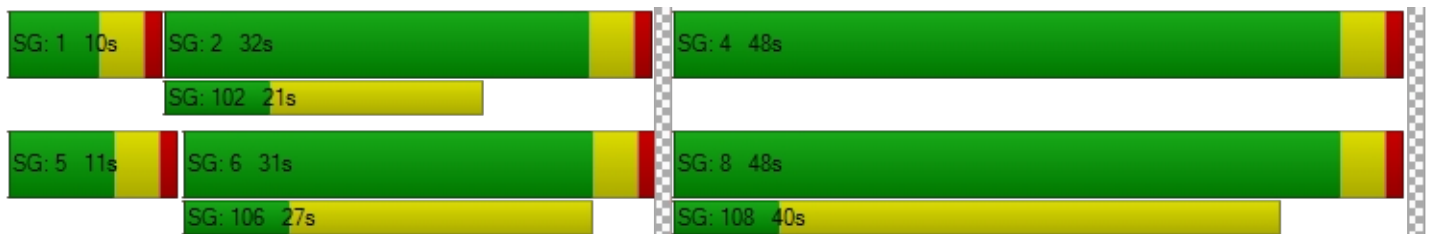
|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 35.98 | 35.98 | 35.98 | 34.89 | 34.89 | 38.67 | 45.39 | 8.79 | 9.70 | 48.78 | 10.04 | 10.71 |
| Movement LOS                    | D     | D     | D     | C     | C     | D     | D     | A    | A    | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 35.98 |       |       | 37.87 |       |       | 11.95 |      |      | 10.42 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |      |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 15.20 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | B     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.629 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 0.00  | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.823 | 2.469 | 0.000 | 3.361 |
| Crosswalk LOS  | A     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 978   | 978   | 622   | 600   |
| d_b, Bicycle Delay [s]                                   | 11.76 | 11.76 | 21.37 | 22.06 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.827 | 2.541 | 2.932 | 2.564 |
| Bicycle LOS  | A     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 5: Wildcat Way/N Associated Road at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.676 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound  |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T       |        |        | T T T T T    |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left        | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1           | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00       |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00        |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No          |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes         |        |        | Yes          |        |        | Yes          |        |        |



**Volumes**

| Name  | N Associated Road |        |        | Wildcat Way |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|-------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |             |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 154               | 62     | 24     | 92          | 118    | 151    | 49           | 2141   | 227    | 27           | 1548   | 48     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 154               | 62     | 24     | 92          | 118    | 151    | 49           | 2141   | 227    | 27           | 1548   | 48     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 39                | 16     | 6      | 23          | 30     | 38     | 12           | 535    | 57     | 7            | 387    | 12     |
| Total Analysis Volume [veh/h]               | 154               | 62     | 24     | 92          | 118    | 151    | 49           | 2141   | 227    | 27           | 1548   | 48     |
| Presence of On-Street Parking               | No                |        | No     | No          |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0           | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0           |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 19       | 27      | 0       | 22       | 30      | 0       | 10       | 31      | 0       | 10       | 31      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 16      | 0       | 0        | 19      | 0       | 0        | 20      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R    | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90   | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 10    | 13    | 13    | 6     | 10    | 10    | 4     | 52    | 52   | 3     | 51    | 51    |
| g / C, Green / Cycle                    | 0.11  | 0.15  | 0.15  | 0.07  | 0.11  | 0.11  | 0.05  | 0.58  | 0.58 | 0.03  | 0.56  | 0.56  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.02  | 0.02  | 0.05  | 0.06  | 0.08  | 0.01  | 0.38  | 0.12 | 0.02  | 0.28  | 0.29  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1900  | 1900  | 3500  | 5700  | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 192   | 277   | 277   | 122   | 204   | 204   | 169   | 3276  | 1092 | 61    | 2129  | 1065  |
| d1, Uniform Delay [s]                   | 39.36 | 33.66 | 33.63 | 41.30 | 38.31 | 39.04 | 41.41 | 13.06 | 9.26 | 42.70 | 12.05 | 12.21 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 7.63  | 0.26  | 0.25  | 9.06  | 2.59  | 5.22  | 0.93  | 1.03  | 0.43 | 4.87  | 0.82  | 1.75  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |       |        |        |        |       |        |       |       |        |        |
|---------------------------------------|--------|-------|-------|--------|--------|--------|-------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.80   | 0.16  | 0.15  | 0.75   | 0.58   | 0.74   | 0.29  | 0.65   | 0.21  | 0.44  | 0.49   | 0.51   |
| d, Delay for Lane Group [s/veh]       | 46.99  | 33.92 | 33.88 | 50.36  | 40.90  | 44.26  | 42.34 | 14.09  | 9.70  | 47.57 | 12.87  | 13.96  |
| Lane Group LOS                        | D      | C     | C     | D      | D      | D      | D     | B      | A     | D     | B      | B      |
| Critical Lane Group                   | Yes    | No    | No    | No     | No     | Yes    | No    | Yes    | No    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 3.69   | 0.85  | 0.82  | 2.29   | 2.60   | 3.49   | 0.54  | 9.13   | 2.12  | 0.67  | 6.12   | 6.68   |
| 50th-Percentile Queue Length [ft/ln]  | 92.22  | 21.30 | 20.39 | 57.27  | 64.90  | 87.24  | 13.56 | 228.36 | 53.02 | 16.68 | 152.93 | 166.91 |
| 95th-Percentile Queue Length [veh/ln] | 6.64   | 1.53  | 1.47  | 4.12   | 4.67   | 6.28   | 0.98  | 14.09  | 3.82  | 1.20  | 10.17  | 10.91  |
| 95th-Percentile Queue Length [ft/ln]  | 165.99 | 38.34 | 36.69 | 103.09 | 116.83 | 157.02 | 24.41 | 352.28 | 95.44 | 30.02 | 254.33 | 272.85 |

**Movement, Approach, & Intersection Results**

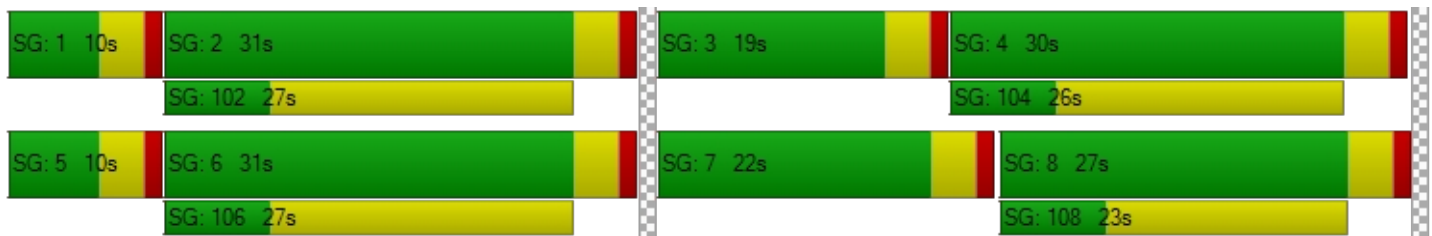
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 46.99 | 33.91 | 33.88 | 50.36 | 40.90 | 44.26 | 42.34 | 14.09 | 9.70 | 47.57 | 13.22 | 13.96 |
| Movement LOS                    | D     | C     | C     | D     | D     | D     | D     | B     | A    | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 42.30 |       |       | 44.72 |       |       | 14.25 |       |      | 13.82 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 17.92 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | B     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.676 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.72 | 34.72 | 34.72 | 34.72 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.419 | 2.401 | 3.311 | 3.134 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 511   | 577   | 599   | 599   |
| d_b, Bicycle Delay [s]                                   | 24.98 | 22.80 | 22.09 | 22.09 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.758 | 1.857 | 2.889 | 2.452 |
| Bicycle LOS  | A     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 6: Santa Fe Road/Kraemer Boulevard at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 31.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.657 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound    |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T           |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left          | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1             | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00         |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00          |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No            |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes           |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Santa Fe Road |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|-------------------|--------|--------|---------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 610               | 343    | 270    | 6             | 122    | 126    | 209          | 1129   | 531    | 112          | 501    | 33     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 610               | 343    | 270    | 6             | 122    | 126    | 209          | 1129   | 531    | 112          | 501    | 33     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 153               | 86     | 68     | 2             | 31     | 32     | 52           | 282    | 133    | 28           | 125    | 8      |
| Total Analysis Volume [veh/h]               | 610               | 343    | 270    | 6             | 122    | 126    | 209          | 1129   | 531    | 112          | 501    | 33     |
| Presence of On-Street Parking               | No                |        | No     | No            |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0             | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0             |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7        | 4       | 0       | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |          |         |         |          |         | 2,3     |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 6        | 6       | 0       | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 30       | 30      | 0       | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 27       | 59      | 59      | 10       | 42      | 0       | 19       | 41      | 41      | 10       | 32      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0        | 7       | 0       | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 30      | 30      | 0        | 31      | 0       | 0        | 26      | 26      | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Maximum Recall               | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      | No       | No      |         | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 23    | 32    | 42    | 1     | 10    | 10    | 15    | 65    | 92   | 6     | 56    | 56    |
| g / C, Green / Cycle                    | 0.19  | 0.27  | 0.35  | 0.01  | 0.09  | 0.09  | 0.13  | 0.54  | 0.76 | 0.05  | 0.47  | 0.47  |
| (v / s)_i Volume / Saturation Flow Rate | 0.17  | 0.18  | 0.14  | 0.00  | 0.06  | 0.07  | 0.12  | 0.30  | 0.14 | 0.03  | 0.09  | 0.10  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 3800 | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 665   | 507   | 667   | 18    | 165   | 165   | 226   | 2049  | 2897 | 178   | 1765  | 883   |
| d1, Uniform Delay [s]                   | 47.70 | 39.38 | 29.48 | 59.03 | 53.49 | 53.61 | 51.95 | 18.14 | 3.94 | 55.88 | 18.98 | 19.03 |
| k, delay calibration                    | 0.11  | 0.11  | 0.13  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.64  | 1.59  | 0.49  | 10.37 | 6.34  | 7.13  | 14.87 | 1.07  | 0.14 | 3.66  | 0.25  | 0.53  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |        |        |        |        |       |       |        |        |
|---------------------------------------|--------|--------|--------|-------|--------|--------|--------|--------|-------|-------|--------|--------|
| X, volume / capacity                  | 0.92   | 0.68   | 0.40   | 0.33  | 0.74   | 0.76   | 0.93   | 0.55   | 0.18  | 0.63  | 0.20   | 0.21   |
| d, Delay for Lane Group [s/veh]       | 53.35  | 40.97  | 29.98  | 69.40 | 59.82  | 60.74  | 66.81  | 19.21  | 4.08  | 59.54 | 19.23  | 19.56  |
| Lane Group LOS                        | D      | D      | C      | E     | E      | E      | E      | B      | A     | E     | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No    | No     | Yes    | No     | Yes    | No    | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 9.43   | 9.25   | 6.00   | 0.23  | 3.88   | 4.05   | 7.15   | 10.31  | 1.60  | 1.76  | 2.97   | 3.13   |
| 50th-Percentile Queue Length [ft/ln]  | 235.84 | 231.18 | 149.95 | 5.84  | 97.12  | 101.18 | 178.67 | 257.75 | 40.11 | 43.88 | 74.24  | 78.13  |
| 95th-Percentile Queue Length [veh/ln] | 14.47  | 14.23  | 10.01  | 0.42  | 6.99   | 7.29   | 11.53  | 15.58  | 2.89  | 3.16  | 5.35   | 5.63   |
| 95th-Percentile Queue Length [ft/ln]  | 361.77 | 355.86 | 250.36 | 10.50 | 174.81 | 182.13 | 288.28 | 389.39 | 72.20 | 78.98 | 133.63 | 140.63 |



**Movement, Approach, & Intersection Results**

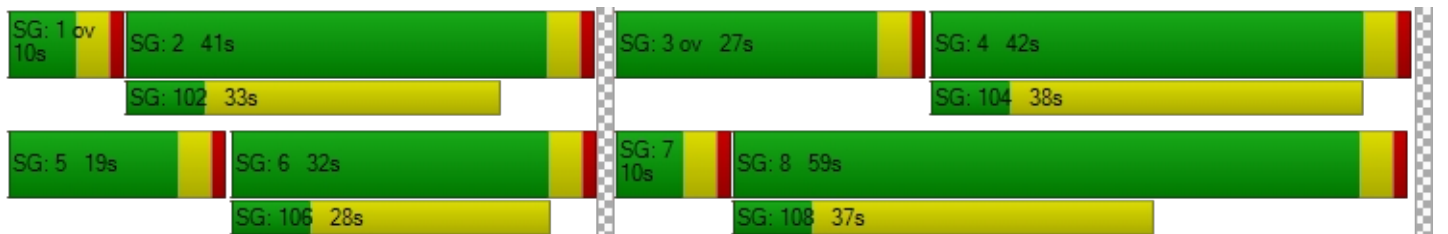
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 53.35 | 40.97 | 29.98 | 69.40 | 59.82 | 60.74 | 66.81 | 19.21 | 4.08 | 59.54 | 19.33 | 19.56 |
| Movement LOS                    | D     | D     | C     | E     | E     | E     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 44.72 |       |       | 60.50 |       |       | 20.24 |       |      | 26.31 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | C     |       |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 31.28 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.657 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.790 | 2.349 | 3.118 | 2.893 |
| Crosswalk LOS  | C     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 916   | 633   | 617   | 467   |
| d_b, Bicycle Delay [s]                                   | 17.62 | 28.03 | 28.72 | 35.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.578 | 1.979 | 3.102 | 1.915 |
| Bicycle LOS  | D     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 7: Sunflower Street at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.9   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.501 |

**Intersection Setup**

| Name                         | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound       |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left             | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 0      | 0                | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00            |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00             |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No               |        |        | No               |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes              |        |        | Yes              |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Sunflower Street |        |        | Sunflower Street |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------------|--------|--------|------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                  |        |        |                  |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 28               | 2      | 15     | 2                | 0      | 6      | 6            | 1605   | 23     | 6            | 835    | 3      |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 28               | 2      | 15     | 2                | 0      | 6      | 6            | 1605   | 23     | 6            | 835    | 3      |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 7                | 1      | 4      | 1                | 0      | 2      | 2            | 401    | 6      | 2            | 209    | 1      |
| Total Analysis Volume [veh/h]               | 28               | 2      | 15     | 2                | 0      | 6      | 6            | 1605   | 23     | 6            | 835    | 3      |
| Presence of On-Street Parking               | No               |        | No     | No               |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0                | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0                |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 7       | 0       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | Lead    | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 6       | 0       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 30      | 0       | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 40      | 0       | 40      | 0       | 0       | 10       | 30      | 0       | 10       | 30      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 7       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 29      | 0       | 29      | 0       | 0       | 0        | 18      | 0       | 0        | 16      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         | No      |         |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         | No      |         |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | R     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 1     | 1     | 1     | 97   | 97   | 1     | 97   | 97   |
| g / C, Green / Cycle                    | 0.04  | 0.04  | 0.01  | 0.01  | 0.01  | 0.81 | 0.81 | 0.01  | 0.81 | 0.81 |
| (v / s)_i Volume / Saturation Flow Rate | 0.02  | 0.01  | 0.00  | 0.00  | 0.00  | 0.43 | 0.43 | 0.00  | 0.14 | 0.15 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 71    | 75    | 22    | 23    | 17    | 1531 | 1531 | 17    | 3062 | 1531 |
| d1, Uniform Delay [s]                   | 56.27 | 55.89 | 58.63 | 58.75 | 59.07 | 3.97 | 3.96 | 59.07 | 2.65 | 2.67 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.56  | 1.53  | 1.77  | 5.77  | 11.67 | 1.33 | 1.32 | 11.67 | 0.13 | 0.27 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |       |       |       |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|
| X, volume / capacity                  | 0.40  | 0.23  | 0.09  | 0.26  | 0.35  | 0.53   | 0.53   | 0.35  | 0.18  | 0.19  |
| d, Delay for Lane Group [s/veh]       | 59.83 | 57.42 | 60.40 | 64.52 | 70.74 | 5.30   | 5.28   | 70.74 | 2.78  | 2.94  |
| Lane Group LOS                        | E     | E     | E     | E     | E     | A      | A      | E     | A     | A     |
| Critical Lane Group                   | Yes   | No    | No    | Yes   | No    | Yes    | No     | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.90  | 0.53  | 0.07  | 0.22  | 0.24  | 5.66   | 5.64   | 0.24  | 1.20  | 1.33  |
| 50th-Percentile Queue Length [ft/ln]  | 22.48 | 13.29 | 1.77  | 5.45  | 5.93  | 141.59 | 140.91 | 5.93  | 30.06 | 33.24 |
| 95th-Percentile Queue Length [veh/ln] | 1.62  | 0.96  | 0.13  | 0.39  | 0.43  | 9.57   | 9.53   | 0.43  | 2.16  | 2.39  |
| 95th-Percentile Queue Length [ft/ln]  | 40.46 | 23.93 | 3.19  | 9.81  | 10.67 | 239.16 | 238.25 | 10.67 | 54.10 | 59.83 |

**Movement, Approach, & Intersection Results**

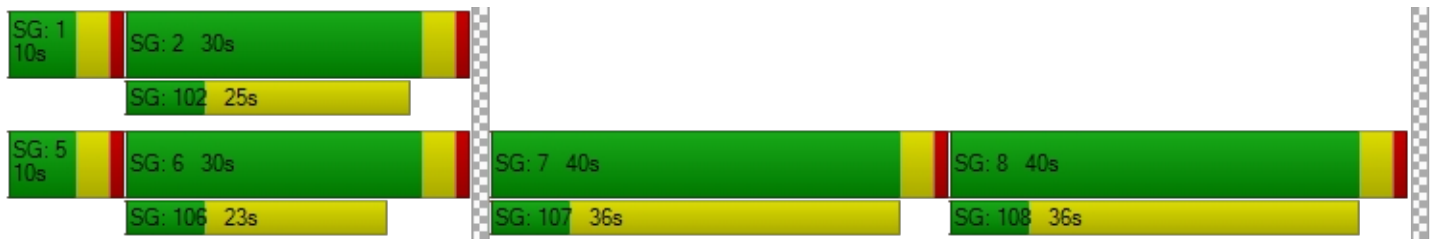
|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 59.83 | 57.42 | 57.42 | 60.40 | 0.00 | 64.52 | 70.74 | 5.29 | 5.28 | 70.74 | 2.83 | 2.94 |
| Movement LOS                    | E     | E     | E     | E     |      | E     | E     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 58.92 |       |       | 63.49 |      |       | 5.53  |      |      | 3.32  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 5.93  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.501 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.978 | 1.960 | 2.873 | 2.867 |
| Crosswalk LOS  | A     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 600   | 600   | 433   | 433   |
| d_b, Bicycle Delay [s]                                   | 29.41 | 29.41 | 36.82 | 36.82 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.634 | 1.560 | 2.908 | 2.024 |
| Bicycle LOS  | A     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 40.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.749 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound          |        |        |
| Lane Configuration           |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 0      | 1            | 0      | 0      | 1                  | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00               |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No                 |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes                |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 422             | 162    | 873    | 27              | 124    | 38     | 33           | 957    | 598    | 198                | 369    | 9      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 422             | 162    | 873    | 27              | 124    | 38     | 33           | 957    | 598    | 198                | 369    | 9      |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 106             | 41     | 218    | 7               | 31     | 10     | 8            | 239    | 150    | 50                 | 92     | 2      |
| Total Analysis Volume [veh/h]               | 422             | 162    | 873    | 27              | 124    | 38     | 33           | 957    | 598    | 198                | 369    | 9      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Unsigna | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 30       | 61      | 0       | 12       | 43      | 0       | 10       | 36      | 0       | 11       | 37      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 31      | 0       | 0        | 32      | 0       | 0        | 25      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | C     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 26    | 30    | 4     | 7     | 7     | 4     | 64    | 64    | 7     | 67    | 67    |
| g / C, Green / Cycle                    | 0.22  | 0.25  | 0.03  | 0.06  | 0.06  | 0.03  | 0.53  | 0.53  | 0.06  | 0.55  | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate | 0.23  | 0.04  | 0.02  | 0.04  | 0.04  | 0.02  | 0.25  | 0.31  | 0.06  | 0.07  | 0.07  |
| s, saturation flow rate [veh/h]         | 1800  | 3800  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 390   | 944   | 55    | 118   | 118   | 62    | 2009  | 1005  | 207   | 2103  | 1052  |
| d1, Uniform Delay [s]                   | 47.02 | 35.42 | 57.27 | 55.17 | 55.10 | 57.04 | 17.82 | 19.46 | 56.34 | 12.81 | 12.84 |
| k, delay calibration                    | 0.41  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 64.95 | 0.09  | 6.61  | 7.09  | 6.51  | 7.03  | 0.81  | 2.60  | 20.56 | 0.11  | 0.24  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |       |        |        |       |        |        |        |       |       |
|---------------------------------------|--------|-------|-------|--------|--------|-------|--------|--------|--------|-------|-------|
| X, volume / capacity                  | 1.08   | 0.17  | 0.49  | 0.69   | 0.67   | 0.54  | 0.48   | 0.60   | 0.96   | 0.12  | 0.12  |
| d, Delay for Lane Group [s/veh]       | 111.97 | 35.51 | 63.88 | 62.26  | 61.61  | 64.06 | 18.63  | 22.06  | 76.90  | 12.92 | 13.08 |
| Lane Group LOS                        | F      | D     | E     | E      | E      | E     | B      | C      | E      | B     | B     |
| Critical Lane Group                   | Yes    | No    | No    | Yes    | No     | No    | No     | Yes    | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 18.61  | 1.89  | 0.91  | 2.67   | 2.58   | 1.11  | 8.42   | 11.90  | 3.58   | 1.63  | 1.73  |
| 50th-Percentile Queue Length [ft/ln]  | 465.13 | 47.18 | 22.71 | 66.79  | 64.50  | 27.66 | 210.46 | 297.56 | 89.52  | 40.65 | 43.37 |
| 95th-Percentile Queue Length [veh/ln] | 26.83  | 3.40  | 1.64  | 4.81   | 4.64   | 1.99  | 13.18  | 17.56  | 6.45   | 2.93  | 3.12  |
| 95th-Percentile Queue Length [ft/ln]  | 670.67 | 84.92 | 40.88 | 120.23 | 116.09 | 49.79 | 329.42 | 439.01 | 161.14 | 73.17 | 78.07 |

**Movement, Approach, & Intersection Results**

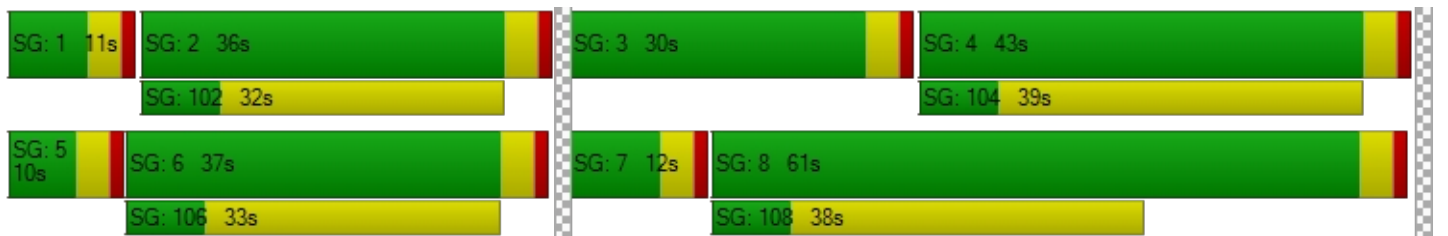
|                                 |        |       |      |       |       |       |       |       |       |       |       |       |
|---------------------------------|--------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 111.97 | 35.51 | 0.00 | 63.88 | 62.05 | 61.61 | 64.06 | 18.63 | 22.06 | 76.90 | 12.97 | 13.08 |
| Movement LOS                    | F      | D     |      | E     | E     | E     | E     | B     | C     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 90.76  |       |      | 62.22 |       |       | 20.87 |       |       | 34.95 |       |       |
| Approach LOS                    | F      |       |      | E     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 40.19  |       |      |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D      |       |      |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.749  |       |      |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.711 |  |  | 2.390 |  |  | 2.944 |  |  | 2.929 |  |  |
| Crosswalk LOS  | B     |  |  | B     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 950   |  |  | 650   |  |  | 533   |  |  | 550   |  |  |
| d_b, Bicycle Delay [s]                                   | 16.55 |  |  | 27.35 |  |  | 32.28 |  |  | 31.55 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.041 |  |  | 1.716 |  |  | 2.433 |  |  | 1.876 |  |  |
| Bicycle LOS  | B     |  |  | A     |  |  | B     |  |  | A     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 9: Santa Fe Road at Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.0   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.563 |

**Intersection Setup**

| Name                         | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound    |        |        | Southbound    |        |        | Eastbound          |        |        | Westbound          |        |        |
| Lane Configuration           | +             |        |        | ⤵             |        |        | ↵                  |        |        | ↵                  |        |        |
| Turning Movement             | Left          | Thru   | Right  | Left          | Thru   | Right  | Left               | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00         | 12.00  | 12.00  | 12.00         | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0             | 0      | 0      | 0             | 0      | 0      | 1                  | 0      | 0      | 1                  | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00        | 100.00 | 100.00 | 100.00        | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00          | 0.00   | 0.00   | 0.00          | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00         |        |        | 30.00         |        |        | 30.00              |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00          |        |        | 0.00          |        |        | 0.00               |        |        | 0.00               |        |        |
| Curb Present                 | No            |        |        | No            |        |        | No                 |        |        | No                 |        |        |
| Crosswalk                    | Yes           |        |        | Yes           |        |        | No                 |        |        | Yes                |        |        |

**Volumes**

| Name  | Santa Fe Road |        |        | Santa Fe Road |        |        | Carbon Canyon Road |        |        | Carbon Canyon Road |        |        |
|---|---------------|--------|--------|---------------|--------|--------|--------------------|--------|--------|--------------------|--------|--------|
|   |               |        |        |               |        |        |                    |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 12            | 0      | 2      | 0             | 0      | 23     | 2                  | 1877   | 2      | 1                  | 457    | 13     |
| Base Volume Adjustment Factor               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00          | 2.00   | 2.00   | 2.00          | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 12            | 0      | 2      | 0             | 0      | 23     | 2                  | 1877   | 2      | 1                  | 457    | 13     |
| Peak Hour Factor                            | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000        | 1.0000 | 1.0000 | 1.0000        | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 3             | 0      | 1      | 0             | 0      | 6      | 1                  | 469    | 1      | 0                  | 114    | 3      |
| Total Analysis Volume [veh/h]               | 12            | 0      | 2      | 0             | 0      | 23     | 2                  | 1877   | 2      | 1                  | 457    | 13     |
| Presence of On-Street Parking               | No            |        | No     | No            |        | No     | No                 |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0             | 0      | 0      | 0             | 0      | 0      | 0                  | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0             |        |        | 0             |        |        | 0                  |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 0       | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 0       | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 0       | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 0.0     | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 35      | 0       | 0       | 0       | 35      | 10       | 75      | 0       | 10       | 75      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 0.0     | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 0       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 24      | 0       | 0       | 0       | 0       | 0        | 17      | 0       | 0        | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         |         | No      |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 0.0     | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         |         | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120  | 120  | 120   | 120  | 120  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 3     | 3     | 0     | 105  | 105  | 0     | 104  | 104  |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.00  | 0.87 | 0.87 | 0.00  | 0.87 | 0.87 |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.01  | 0.00  | 0.49 | 0.49 | 0.00  | 0.12 | 0.01 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900 | 1900 | 1900  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 105   | 52    | 7     | 1654 | 1654 | 4     | 3303 | 1651 |
| d1, Uniform Delay [s]                   | 57.21 | 57.46 | 59.61 | 1.98 | 1.98 | 59.76 | 1.17 | 1.03 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 0.57  | 5.91  | 23.33 | 1.42 | 1.42 | 29.31 | 0.09 | 0.01 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |        |        |       |       |      |
|---------------------------------------|-------|-------|-------|--------|--------|-------|-------|------|
| X, volume / capacity                  | 0.13  | 0.45  | 0.30  | 0.57   | 0.57   | 0.25  | 0.14  | 0.01 |
| d, Delay for Lane Group [s/veh]       | 57.78 | 63.37 | 82.93 | 3.40   | 3.40   | 89.07 | 1.26  | 1.04 |
| Lane Group LOS                        | E     | E     | F     | A      | A      | F     | A     | A    |
| Critical Lane Group                   | No    | Yes   | No    | Yes    | No     | Yes   | No    | No   |
| 50th-Percentile Queue Length [veh/ln] | 0.43  | 0.77  | 0.10  | 3.27   | 3.27   | 0.06  | 0.42  | 0.02 |
| 50th-Percentile Queue Length [ft/ln]  | 10.84 | 19.32 | 2.60  | 81.86  | 81.85  | 1.58  | 10.51 | 0.58 |
| 95th-Percentile Queue Length [veh/ln] | 0.78  | 1.39  | 0.19  | 5.89   | 5.89   | 0.11  | 0.76  | 0.04 |
| 95th-Percentile Queue Length [ft/ln]  | 19.51 | 34.77 | 4.67  | 147.34 | 147.33 | 2.84  | 18.91 | 1.04 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |      |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 57.78 | 57.78 | 57.78 | 0.00  | 0.00 | 63.37 | 82.93 | 3.40 | 3.40 | 89.07 | 1.26 | 1.04 |
| Movement LOS                    | E     | E     | E     |       |      | E     | F     | A    | A    | F     | A    | A    |
| d_A, Approach Delay [s/veh]     | 57.78 |       |       | 63.37 |      |       | 3.49  |      |      | 1.44  |      |      |
| Approach LOS                    | E     |       |       | E     |      |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 3.98  |       |       |       |      |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |      |       |       |      |      |       |      |      |
| Intersection V/C                | 0.563 |       |       |       |      |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.50 | 49.50 | 0.00  | 49.50 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.737 | 1.747 | 0.000 | 2.849 |
| Crosswalk LOS  | A     | A     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 517   | 517   | 1184  | 1184  |
| d_b, Bicycle Delay [s]                                   | 33.00 | 33.00 | 10.00 | 10.00 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.583 | 1.560 | 3.111 | 1.948 |
| Bicycle LOS  | A     | A     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 10: State College Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 39.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.876 |

**Intersection Setup**

| Name                         | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound              |        |        | Southbound              |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T                   |        |        | T T T                   |        |        | T T T        |        |        | T T T        |        |        |
| Turning Movement             | Left                    | Thru   | Right  | Left                    | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00                   | 12.00  | 12.00  | 12.00                   | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                       | 0      | 1      | 1                       | 0      | 1      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00                  | 100.00 | 100.00 | 100.00                  | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00                    | 0.00   | 0.00   | 0.00                    | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00                   |        |        | 30.00                   |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00                    |        |        | 0.00                    |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                      |        |        | No                      |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes                     |        |        | Yes                     |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | State College Boulevard |        |        | State College Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------------|--------|--------|-------------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   | 157                     | 478    | 185    | 393                     | 435    | 363    | 320          | 893    | 182    | 172          | 1140   | 749    |
| Base Volume Input [veh/h]                   | 157                     | 478    | 185    | 393                     | 435    | 363    | 320          | 893    | 182    | 172          | 1140   | 749    |
| Base Volume Adjustment Factor               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00                    | 2.00   | 2.00   | 2.00                    | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 157                     | 478    | 185    | 393                     | 435    | 363    | 320          | 893    | 182    | 172          | 1140   | 749    |
| Peak Hour Factor                            | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000                  | 1.0000 | 1.0000 | 1.0000                  | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 39                      | 120    | 46     | 98                      | 109    | 91     | 80           | 223    | 46     | 43           | 285    | 187    |
| Total Analysis Volume [veh/h]               | 157                     | 478    | 185    | 393                     | 435    | 363    | 320          | 893    | 182    | 172          | 1140   | 749    |
| Presence of On-Street Parking               | No                      |        | No     | No                      |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                       | 0      | 0      | 0                       | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                       |        |        | 0                       |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10       | 39      | 0       | 27       | 56      | 0       | 17       | 42      | 0       | 12       | 37      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 30      | 0       | 0        | 28      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 21    | 21    | 16    | 31    | 31    | 13    | 60    | 60    | 8     | 55    | 55    |
| g / C, Green / Cycle                    | 0.05  | 0.17  | 0.17  | 0.13  | 0.25  | 0.25  | 0.11  | 0.50  | 0.50  | 0.07  | 0.45  | 0.45  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.13  | 0.10  | 0.11  | 0.23  | 0.19  | 0.09  | 0.24  | 0.10  | 0.05  | 0.30  | 0.39  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 178   | 656   | 328   | 466   | 485   | 485   | 375   | 1883  | 941   | 229   | 1724  | 862   |
| d1, Uniform Delay [s]                   | 56.63 | 47.00 | 45.52 | 50.82 | 43.21 | 41.19 | 52.66 | 19.98 | 16.90 | 55.13 | 25.59 | 29.57 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 13.28 | 1.57  | 1.52  | 4.25  | 6.21  | 2.35  | 5.53  | 0.86  | 0.46  | 4.89  | 2.01  | 11.57 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.88   | 0.73   | 0.56   | 0.84   | 0.90   | 0.75   | 0.85   | 0.47   | 0.19   | 0.75   | 0.66   | 0.87   |
| d, Delay for Lane Group [s/veh]       | 69.91  | 48.57  | 47.04  | 55.07  | 49.42  | 43.53  | 58.19  | 20.84  | 17.36  | 60.02  | 27.60  | 41.14  |
| Lane Group LOS                        | E      | D      | D      | E      | D      | D      | E      | C      | B      | E      | C      | D      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | Yes    | No     | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 2.69   | 6.90   | 5.20   | 6.04   | 6.61   | 10.17  | 5.02   | 8.34   | 2.92   | 2.71   | 12.95  | 21.69  |
| 50th-Percentile Queue Length [ft/ln]  | 67.32  | 172.46 | 130.07 | 150.91 | 165.30 | 254.24 | 125.59 | 208.61 | 73.00  | 67.84  | 323.63 | 542.35 |
| 95th-Percentile Queue Length [veh/ln] | 4.85   | 11.21  | 8.94   | 10.07  | 10.83  | 15.40  | 8.70   | 13.08  | 5.26   | 4.88   | 18.85  | 29.33  |
| 95th-Percentile Queue Length [ft/ln]  | 121.18 | 280.15 | 223.60 | 251.64 | 270.73 | 384.99 | 217.49 | 327.05 | 131.39 | 122.12 | 471.14 | 733.32 |

**Movement, Approach, & Intersection Results**

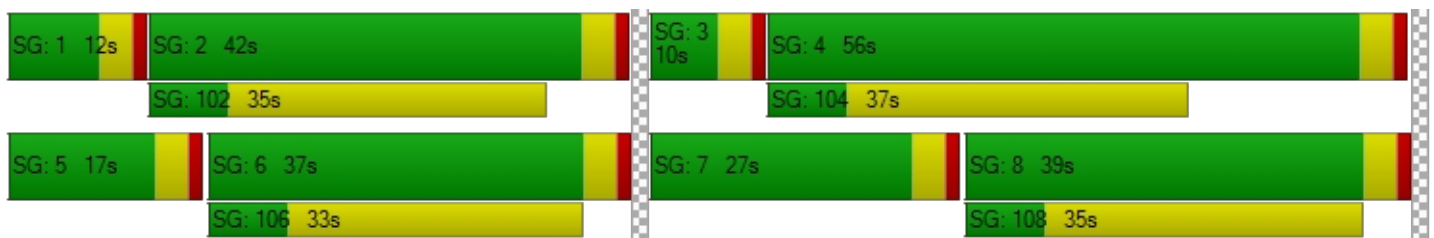
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 69.91 | 48.57 | 47.04 | 55.07 | 49.42 | 43.53 | 58.19 | 20.84 | 17.36 | 60.02 | 27.60 | 41.14 |
| Movement LOS                    | E     | D     | D     | E     | D     | D     | E     | C     | B     | E     | C     | D     |
| d_A, Approach Delay [s/veh]     | 52.31 |       |       | 49.49 |       |       | 28.95 |       |       | 35.23 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 39.30 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.876 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.832 | 2.989 | 3.033 | 3.100 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 583   | 866   | 633   | 550   |
| d_b, Bicycle Delay [s]                                   | 30.12 | 19.28 | 28.03 | 31.55 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.236 | 2.542 | 2.710 | 3.260 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 11: S Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.761 |

**Intersection Setup**

| Name                         | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇐⇐               |        |        | ⇐⇐                |        |        | ⇐⇐           |        |        | ⇐⇐⇐          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | S Associated Road |        |        | S Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 559               | 37     | 403    | 11                | 23     | 11     | 17           | 1043   | 349    | 332          | 1474   | 19     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 559               | 37     | 403    | 11                | 23     | 11     | 17           | 1043   | 349    | 332          | 1474   | 19     |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 140               | 9      | 101    | 3                 | 6      | 3      | 4            | 261    | 87     | 83           | 369    | 5      |
| Total Analysis Volume [veh/h]               | 559               | 37     | 403    | 11                | 23     | 11     | 17           | 1043   | 349    | 332          | 1474   | 19     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Overlap | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 8       | 7       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         | 1,8     |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 6       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 30      | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 1.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 28       | 65      | 65      | 0       | 37      | 0       | 10       | 38      | 0       | 17       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 3.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 7       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 26      | 0       | 26      | 0       | 0        | 27      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 2.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      | No      |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 21    | 30    | 47    | 5     | 5     | 3     | 65    | 65    | 13    | 75    | 75    |
| g / C, Green / Cycle                    | 0.18  | 0.25  | 0.39  | 0.04  | 0.04  | 0.02  | 0.54  | 0.54  | 0.11  | 0.63  | 0.63  |
| (v / s)_i Volume / Saturation Flow Rate | 0.16  | 0.02  | 0.21  | 0.01  | 0.02  | 0.01  | 0.38  | 0.35  | 0.09  | 0.39  | 0.39  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 1800  | 1900  | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  |
| c, Capacity [veh/h]                     | 624   | 477   | 746   | 77    | 75    | 40    | 1027  | 1027  | 380   | 1191  | 1191  |
| d1, Uniform Delay [s]                   | 48.21 | 34.34 | 28.08 | 55.73 | 56.40 | 57.94 | 20.42 | 19.60 | 52.69 | 13.76 | 13.75 |
| k, delay calibration                    | 0.11  | 0.11  | 0.34  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.83  | 0.07  | 1.90  | 0.84  | 4.29  | 7.10  | 4.00  | 3.24  | 6.36  | 2.50  | 2.50  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |       |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.90   | 0.08  | 0.54   | 0.14  | 0.46  | 0.43  | 0.70   | 0.65   | 0.87   | 0.63   | 0.63   |
| d, Delay for Lane Group [s/veh]       | 53.05  | 34.41 | 29.98  | 56.57 | 60.69 | 65.04 | 24.42  | 22.84  | 59.05  | 16.27  | 16.25  |
| Lane Group LOS                        | D      | C     | C      | E     | E     | E     | C      | C      | E      | B      | B      |
| Critical Lane Group                   | No     | No    | Yes    | No    | No    | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 8.57   | 0.84  | 9.28   | 0.34  | 1.10  | 0.59  | 15.56  | 13.82  | 5.26   | 12.56  | 12.54  |
| 50th-Percentile Queue Length [ft/ln]  | 214.29 | 21.07 | 231.98 | 8.51  | 27.45 | 14.71 | 389.08 | 345.57 | 131.44 | 314.08 | 313.52 |
| 95th-Percentile Queue Length [veh/ln] | 13.37  | 1.52  | 14.27  | 0.61  | 1.98  | 1.06  | 22.03  | 19.92  | 9.02   | 18.38  | 18.35  |
| 95th-Percentile Queue Length [ft/ln]  | 334.33 | 37.93 | 356.87 | 15.33 | 49.41 | 26.49 | 550.83 | 498.00 | 225.45 | 459.40 | 458.71 |

**Movement, Approach, & Intersection Results**

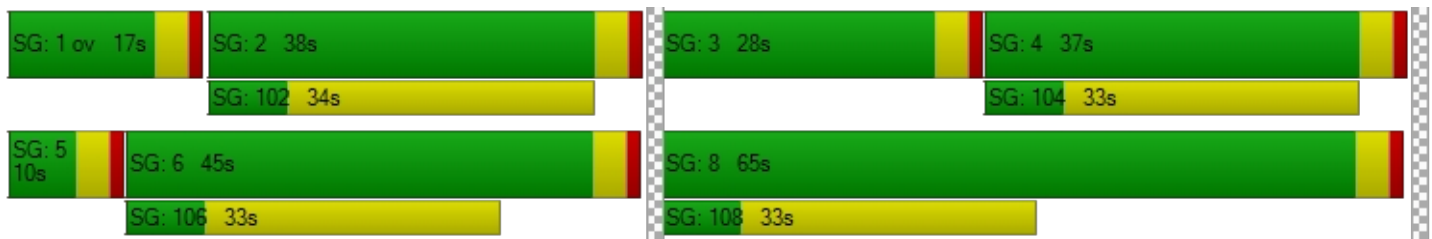
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 53.05 | 34.41 | 29.98 | 56.57 | 60.69 | 60.69 | 65.04 | 23.93 | 22.84 | 59.05 | 16.26 | 16.25 |
| Movement LOS                    | D     | C     | C     | E     | E     | E     | E     | C     | C     | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 43.05 |       |       | 59.68 |       |       | 24.16 |       |       | 24.04 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 28.90 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.761 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 49.51 | 49.51 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.743 | 1.992 | 2.987 | 3.016 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1017  | 550   | 567   | 683   |
| d_b, Bicycle Delay [s]                                   | 14.51 | 31.54 | 30.82 | 26.01 |
| I_b,int, Bicycle LOS Score for Intersection              | 3.208 | 1.634 | 2.722 | 3.065 |
| Bicycle LOS  | C     | A     | B     | C     |

**Sequence**





|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.839 |

**Intersection Setup**

| Name                         | N Associated Road   |        |        | N Associated Road   |        |        | Birch Street  |        |        | Birch Street  |        |        |
|------------------------------|---|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |  |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1      | 1   | 0      | 1      | 1   | 0      | 0      | 1   | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 | No  |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes   |        |        | Yes   |        |        | Yes   |        |        | No  |        |        |

**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 15                | 2      | 12     | 119               | 3      | 335    | 321          | 1086   | 14     | 6            | 1515   | 156    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 15                | 2      | 12     | 119               | 3      | 335    | 321          | 1086   | 14     | 6            | 1515   | 156    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 4                 | 1      | 3      | 30                | 1      | 84     | 80           | 272    | 4      | 2            | 379    | 39     |
| Total Analysis Volume [veh/h]               | 15                | 2      | 12     | 119               | 3      | 335    | 321          | 1086   | 14     | 6            | 1515   | 156    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 39       | 61      | 0       | 10       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C    | C    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115  | 115  | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4     | 4     | 4     | 17    | 17    | 52    | 23    | 78   | 78   | 1     | 55    | 55    |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.03  | 0.14  | 0.14  | 0.45  | 0.20  | 0.67 | 0.67 | 0.01  | 0.48  | 0.48  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.00  | 0.01  | 0.03  | 0.03  | 0.18  | 0.18  | 0.29 | 0.29 | 0.00  | 0.40  | 0.08  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 95    | 62    | 62    | 259   | 259   | 855   | 367   | 1281 | 1281 | 18    | 1825  | 912   |
| d1, Uniform Delay [s]                   | 54.32 | 53.92 | 54.21 | 43.63 | 43.63 | 21.11 | 44.36 | 8.60 | 8.59 | 56.57 | 25.85 | 16.94 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.21  | 0.15  | 0.50 | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.77  | 0.21  | 1.51  | 0.46  | 0.46  | 0.58  | 8.84  | 1.06 | 1.05 | 10.15 | 4.55  | 0.41  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |        |        |       |        |        |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.16  | 0.03  | 0.19  | 0.23  | 0.24  | 0.39   | 0.87   | 0.43   | 0.43   | 0.33  | 0.83   | 0.17   |
| d, Delay for Lane Group [s/veh]       | 55.08 | 54.13 | 55.72 | 44.09 | 44.09 | 21.69  | 53.20  | 9.66   | 9.64   | 66.72 | 30.40  | 17.34  |
| Lane Group LOS                        | E     | D     | E     | D     | D     | C      | D      | A      | A      | E     | C      | B      |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | Yes    | Yes    | No     | No     | No    | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 0.44  | 0.06  | 0.36  | 1.58  | 1.58  | 6.11   | 9.71   | 6.20   | 6.17   | 0.22  | 18.43  | 2.43   |
| 50th-Percentile Queue Length [ft/ln]  | 11.11 | 1.49  | 9.12  | 39.39 | 39.48 | 152.85 | 242.86 | 154.97 | 154.19 | 5.61  | 460.71 | 60.84  |
| 95th-Percentile Queue Length [veh/ln] | 0.80  | 0.11  | 0.66  | 2.84  | 2.84  | 10.17  | 14.83  | 10.28  | 10.24  | 0.40  | 25.47  | 4.38   |
| 95th-Percentile Queue Length [ft/ln]  | 20.00 | 2.69  | 16.41 | 70.90 | 71.07 | 254.23 | 370.64 | 257.05 | 256.01 | 10.10 | 636.72 | 109.51 |

**Movement, Approach, & Intersection Results**

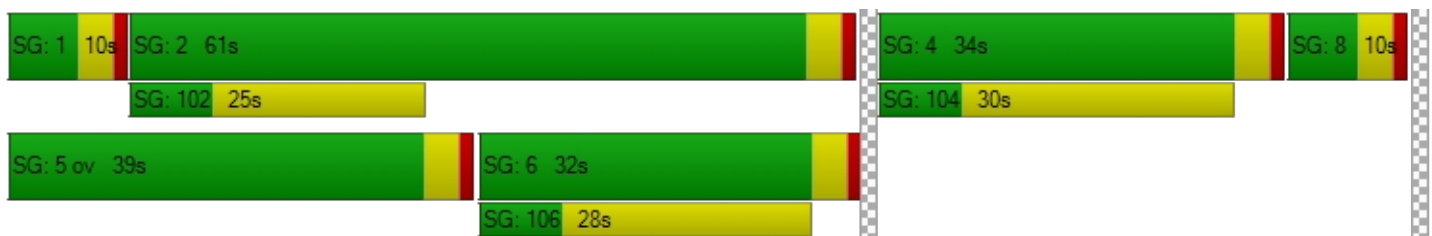
|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 55.08 | 54.13 | 55.72 | 44.09 | 44.09 | 21.69 | 53.20 | 9.65 | 9.64 | 66.72 | 30.40 | 17.34 |
| Movement LOS                    | E     | D     | E     | D     | D     | C     | D     | A    | A    | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 55.28 |       |       | 27.67 |       |       | 19.48 |      |      | 29.32 |       |       |
| Approach LOS                    | E     |       |       | C     |       |       | B     |      |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 25.42 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.839 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.155 | 2.371 | 2.974 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 104   | 522   | 991   | 487   |
| d_b, Bicycle Delay [s]                                   | 51.68 | 31.43 | 14.64 | 32.93 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.607 | 2.314 | 2.732 | 2.943 |
| Bicycle LOS  | A     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 13: Kraemer Boulevard at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 49.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.757 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | T T T             |        |        | T T T             |        |        | T T          |        |        | T T          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 0      | 1            | 0      | 1      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | Yes          |        |        |



**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 674               | 855    | 148    | 240               | 439    | 134    | 258          | 851    | 333    | 91           | 827    | 250    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 674               | 855    | 148    | 240               | 439    | 134    | 258          | 851    | 333    | 91           | 827    | 250    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 169               | 214    | 37     | 60                | 110    | 34     | 65           | 213    | 83     | 23           | 207    | 63     |
| Total Analysis Volume [veh/h]               | 674               | 855    | 148    | 240               | 439    | 134    | 258          | 851    | 333    | 91           | 827    | 250    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 25       | 48      | 0       | 14       | 37      | 0       | 19       | 46      | 0       | 12       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 26      | 0       | 0        | 26      | 0       | 0        | 28      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | R     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 21    | 26    | 26    | 10    | 15    | 15    | 15    | 60    | 60    | 8     | 53    | 53    |
| g / C, Green / Cycle                    | 0.18  | 0.22  | 0.22  | 0.08  | 0.13  | 0.13  | 0.13  | 0.50  | 0.50  | 0.06  | 0.44  | 0.44  |
| (v / s)_i Volume / Saturation Flow Rate | 0.19  | 0.18  | 0.17  | 0.07  | 0.10  | 0.10  | 0.14  | 0.22  | 0.18  | 0.05  | 0.22  | 0.13  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 1800  | 3800  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 613   | 829   | 415   | 294   | 482   | 241   | 226   | 1902  | 951   | 115   | 1669  | 834   |
| d1, Uniform Delay [s]                   | 49.51 | 44.61 | 44.37 | 54.09 | 50.97 | 50.69 | 52.50 | 19.29 | 18.15 | 55.39 | 24.13 | 21.74 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.14  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 50.79 | 2.00  | 3.46  | 5.54  | 3.21  | 5.05  | 78.62 | 0.76  | 1.02  | 11.33 | 1.05  | 0.92  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 1.10   | 0.81   | 0.79   | 0.82   | 0.80   | 0.77   | 1.14   | 0.45   | 0.35   | 0.79   | 0.50   | 0.30   |
| d, Delay for Lane Group [s/veh]       | 100.30 | 46.61  | 47.83  | 59.62  | 54.17  | 55.74  | 131.12 | 20.06  | 19.17  | 66.73  | 25.19  | 22.66  |
| Lane Group LOS                        | F      | D      | D      | E      | D      | E      | F      | C      | B      | E      | C      | C      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | Yes    | No     | No     | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 13.48  | 9.73   | 9.61   | 3.79   | 5.89   | 5.71   | 11.71  | 7.74   | 5.82   | 3.08   | 8.59   | 4.76   |
| 50th-Percentile Queue Length [ft/ln]  | 336.94 | 243.33 | 240.27 | 94.77  | 147.13 | 142.75 | 292.87 | 193.47 | 145.47 | 76.96  | 214.86 | 119.03 |
| 95th-Percentile Queue Length [veh/ln] | 20.42  | 14.85  | 14.69  | 6.82   | 9.86   | 9.63   | 18.32  | 12.30  | 9.77   | 5.54   | 13.40  | 8.34   |
| 95th-Percentile Queue Length [ft/ln]  | 510.50 | 371.24 | 367.37 | 170.58 | 246.59 | 240.73 | 457.97 | 307.53 | 244.37 | 138.53 | 335.06 | 208.50 |

**Movement, Approach, & Intersection Results**

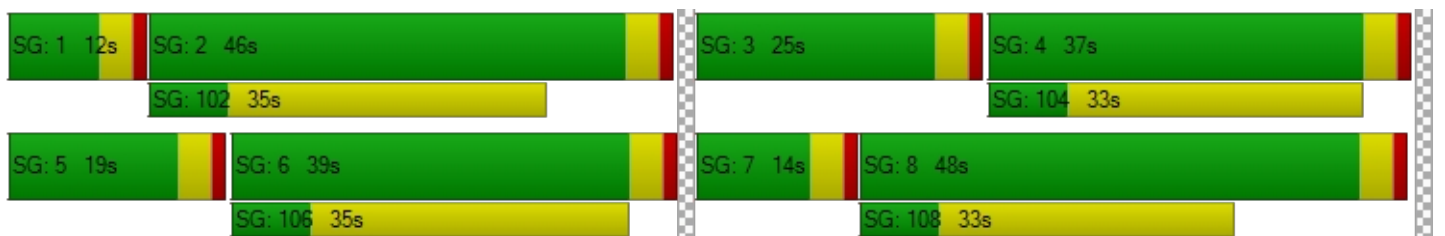
|                                 |        |       |       |       |       |       |        |       |       |       |       |       |
|---------------------------------|--------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 100.30 | 46.86 | 47.83 | 59.62 | 54.35 | 55.74 | 131.12 | 20.06 | 19.17 | 66.73 | 25.19 | 22.66 |
| Movement LOS                    | F      | D     | D     | E     | D     | E     | F      | C     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 68.43  |       |       | 56.14 |       |       | 39.72  |       |       | 27.88 |       |       |
| Approach LOS                    | E      |       |       | E     |       |       | D      |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 49.07  |       |       |       |       |       |        |       |       |       |       |       |
| Intersection LOS                | D      |       |       |       |       |       |        |       |       |       |       |       |
| Intersection V/C                | 0.757  |       |       |       |       |       |        |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 3.049 | 3.004 | 2.967 | 2.858 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 733   | 550   | 700   | 583   |
| d_b, Bicycle Delay [s]                                   | 24.08 | 31.55 | 25.36 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.482 | 2.007 | 2.749 | 2.523 |
| Bicycle LOS  | B     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 103.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.227 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 240             | 710    | 53     | 562             | 308    | 64     | 229          | 735    | 165    | 34         | 565    | 917    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 240             | 710    | 53     | 562             | 308    | 64     | 229          | 735    | 165    | 34         | 565    | 917    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 60              | 178    | 13     | 141             | 77     | 16     | 57           | 184    | 41     | 9          | 141    | 229    |
| Total Analysis Volume [veh/h]               | 240             | 710    | 53     | 562             | 308    | 64     | 229          | 735    | 165    | 34         | 565    | 917    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 32       | 38      | 0       | 32       | 38      | 0       | 10       | 40      | 0       | 10       | 40      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L      | C     | C     | L      | C     | C     | L     | C     | R      |
|---|-------|-------|-------|--------|-------|-------|--------|-------|-------|-------|-------|--------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120    | 120   | 120   | 120    | 120   | 120   | 120   | 120   | 120    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  | 4.00   | 4.00  | 4.00  | 4.00  | 4.00  | 4.00   |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  | 2.00   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00   |
| g_i, Effective Green Time [s]           | 18    | 27    | 27    | 28     | 37    | 37    | 6      | 45    | 45    | 4     | 43    | 43     |
| g / C, Green / Cycle                    | 0.15  | 0.23  | 0.23  | 0.23   | 0.31  | 0.31  | 0.05   | 0.37  | 0.37  | 0.03  | 0.36  | 0.36   |
| (v / s)_i Volume / Saturation Flow Rate | 0.13  | 0.20  | 0.20  | 0.31   | 0.10  | 0.09  | 0.07   | 0.24  | 0.23  | 0.02  | 0.15  | 0.48   |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800   | 1900  | 1900  | 3500   | 1900  | 1900  | 1800  | 3800  | 1900   |
| c, Capacity [veh/h]                     | 272   | 429   | 429   | 420    | 586   | 586   | 178    | 708   | 708   | 63    | 1356  | 678    |
| d1, Uniform Delay [s]                   | 49.93 | 45.14 | 44.86 | 46.03  | 31.95 | 31.74 | 56.98  | 31.26 | 30.65 | 57.00 | 29.18 | 38.62  |
| k, delay calibration                    | 0.11  | 0.25  | 0.23  | 0.50   | 0.11  | 0.11  | 0.11   | 0.50  | 0.50  | 0.11  | 0.50  | 0.50   |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   |
| d2, Incremental Delay [s]               | 9.22  | 14.15 | 11.66 | 167.69 | 0.32  | 0.30  | 139.22 | 4.69  | 3.98  | 7.13  | 0.95  | 168.41 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00   |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00   |

**Lane Group Results**

|                                       |        |        |        |         |        |        |        |        |        |       |        |         |
|---------------------------------------|--------|--------|--------|---------|--------|--------|--------|--------|--------|-------|--------|---------|
| X, volume / capacity                  | 0.88   | 0.90   | 0.88   | 1.34    | 0.33   | 0.31   | 1.29   | 0.66   | 0.62   | 0.54  | 0.42   | 1.35    |
| d, Delay for Lane Group [s/veh]       | 59.15  | 59.29  | 56.52  | 213.71  | 32.27  | 32.03  | 196.21 | 35.95  | 34.63  | 64.13 | 30.12  | 207.02  |
| Lane Group LOS                        | E      | E      | E      | F       | C      | C      | F      | D      | C      | E     | C      | F       |
| Critical Lane Group                   | No     | Yes    | No     | Yes     | No     | No     | Yes    | No     | No     | No    | No     | Yes     |
| 50th-Percentile Queue Length [veh/ln] | 7.74   | 12.80  | 12.17  | 31.98   | 4.35   | 4.07   | 6.13   | 11.99  | 10.97  | 1.14  | 6.33   | 51.25   |
| 50th-Percentile Queue Length [ft/ln]  | 193.45 | 320.02 | 304.21 | 799.47  | 108.82 | 101.72 | 153.19 | 299.71 | 274.24 | 28.50 | 158.33 | 1281.29 |
| 95th-Percentile Queue Length [veh/ln] | 12.30  | 18.67  | 17.89  | 47.83   | 7.77   | 7.32   | 10.87  | 17.67  | 16.40  | 2.05  | 10.46  | 75.47   |
| 95th-Percentile Queue Length [ft/ln]  | 307.50 | 466.71 | 447.23 | 1195.65 | 194.37 | 183.10 | 271.64 | 441.67 | 410.04 | 51.29 | 261.50 | 1886.85 |



**Movement, Approach, & Intersection Results**

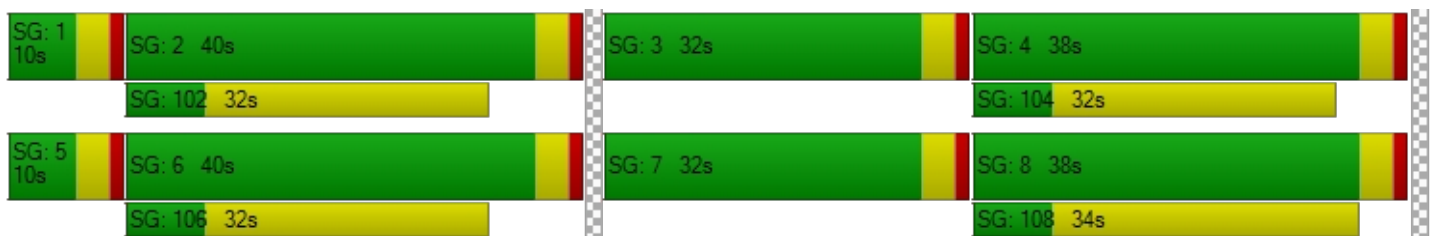
|                                 |        |       |       |        |       |       |        |       |       |        |       |        |
|---------------------------------|--------|-------|-------|--------|-------|-------|--------|-------|-------|--------|-------|--------|
| d_M, Delay for Movement [s/veh] | 59.15  | 58.03 | 56.52 | 213.71 | 32.18 | 32.03 | 196.21 | 35.47 | 34.63 | 64.13  | 30.12 | 207.02 |
| Movement LOS                    | E      | E     | E     | F      | C     | C     | F      | D     | C     | E      | C     | F      |
| d_A, Approach Delay [s/veh]     | 58.22  |       |       | 141.40 |       |       | 67.95  |       |       | 137.89 |       |        |
| Approach LOS                    | E      |       |       | F      |       |       | E      |       |       | F      |       |        |
| d_I, Intersection Delay [s/veh] | 103.93 |       |       |        |       |       |        |       |       |        |       |        |
| Intersection LOS                | F      |       |       |        |       |       |        |       |       |        |       |        |
| Intersection V/C                | 1.227  |       |       |        |       |       |        |       |       |        |       |        |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.608 | 2.858 | 2.791 | 2.932 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 567   | 567   | 600   | 600   |
| d_b, Bicycle Delay [s]                                   | 30.83 | 30.83 | 29.41 | 29.41 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.387 | 2.330 | 2.491 | 2.810 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 10.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.847 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↻↵        |        |        | ↵↻↵        |        |        | ⊕              |        |        | ↵↻↵            |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No             |        |        | No             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
|   |            |        |        |            |        |        |                |        |        |                |        |        |
| Base Volume Input [veh/h]                   | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 42         | 318    | 8      | 3          | 332    | 25     | 12             | 0      | 30     | 7              | 0      | 3      |
| Total Analysis Volume [veh/h]               | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No             |        | No     | No             |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0       | 91      | 0       | 0       | 91      | 0       | 0       | 29      | 0       | 0       | 29      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 7       | 0       | 0       | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 11      | 0       | 0       | 7       | 0       | 0       | 14      | 0       | 0       | 18      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         |         | No      |         |         | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         |         | No      |         |         | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 99   | 99   | 99   | 99   | 99   | 99   | 13    | 13    | 13    |
| g / C, Green / Cycle                    | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.11  | 0.11  | 0.11  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.34 | 0.34 | 0.01 | 0.70 | 0.06 | 0.09  | 0.01  | 0.01  |
| s, saturation flow rate [veh/h]         | 1800 | 1900 | 1900 | 1800 | 1900 | 1800 | 1800  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 769  | 1566 | 1566 | 1336 | 1566 | 1484 | 235   | 65    | 207   |
| d1, Uniform Delay [s]                   | 2.04 | 2.83 | 2.82 | 1.87 | 6.13 | 1.96 | 52.41 | 48.24 | 47.80 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.66 | 0.82 | 0.81 | 0.01 | 5.86 | 0.09 | 3.93  | 3.88  | 0.10  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |      |        |       |        |       |       |
|---------------------------------------|-------|--------|--------|------|--------|-------|--------|-------|-------|
| X, volume / capacity                  | 0.22  | 0.42   | 0.42   | 0.01 | 0.85   | 0.07  | 0.71   | 0.40  | 0.05  |
| d, Delay for Lane Group [s/veh]       | 2.70  | 3.65   | 3.63   | 1.88 | 11.98  | 2.05  | 56.34  | 52.12 | 47.89 |
| Lane Group LOS                        | A     | A      | A      | A    | B      | A     | E      | D     | D     |
| Critical Lane Group                   | No    | No     | No     | No   | Yes    | No    | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.70  | 3.33   | 3.30   | 0.04 | 15.61  | 0.35  | 5.19   | 0.78  | 0.27  |
| 50th-Percentile Queue Length [ft/ln]  | 17.39 | 83.26  | 82.42  | 1.10 | 390.23 | 8.87  | 129.68 | 19.42 | 6.87  |
| 95th-Percentile Queue Length [veh/ln] | 1.25  | 5.99   | 5.93   | 0.08 | 22.09  | 0.64  | 8.92   | 1.40  | 0.49  |
| 95th-Percentile Queue Length [ft/ln]  | 31.30 | 149.87 | 148.36 | 1.97 | 552.22 | 15.97 | 223.06 | 34.96 | 12.36 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |       |      |       |       |       |       |       |       |
|---------------------------------|-------|------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 2.70  | 3.64 | 3.63 | 1.88  | 11.98 | 2.05 | 56.34 | 56.34 | 56.34 | 52.12 | 47.89 | 47.89 |
| Movement LOS                    | A     | A    | A    | A     | B     | A    | E     | E     | E     | D     | D     | D     |
| d_A, Approach Delay [s/veh]     | 3.53  |      |      | 11.20 |       |      | 56.34 |       |       | 50.95 |       |       |
| Approach LOS                    | A     |      |      | B     |       |      | E     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 10.45 |      |      |       |       |      |       |       |       |       |       |       |
| Intersection LOS                | B     |      |      |       |       |      |       |       |       |       |       |       |
| Intersection V/C                | 0.847 |      |      |       |       |      |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.45 |  |  | 49.45 |  |  | 49.45 |  |  | 49.45 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.899 |  |  | 2.924 |  |  | 2.182 |  |  | 1.999 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | B     |  |  | A     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1451  |  |  | 1451  |  |  | 417   |  |  | 417   |  |  |
| d_b, Bicycle Delay [s]                                   | 4.51  |  |  | 4.51  |  |  | 37.56 |  |  | 37.56 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.776 |  |  | 3.936 |  |  | 1.835 |  |  | 1.619 |  |  |
| Bicycle LOS  | C     |  |  | D     |  |  | A     |  |  | A     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 16: SR-57 SB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 18.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.811 |

**Intersection Setup**

| Name                         | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |           |        |        |
|------------------------------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound       |        |        | Eastbound        |        |        | Westbound |        |        |
| Lane Configuration           |                |        |        | ⇐⇐⇐              |        |        | ⇐                |        |        | ⇐         |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0              | 0      | 0      | 1                | 0      | 1      | 0                | 0      | 1      | 0         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00            |        |        | 30.00            |        |        | 30.00     |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00             |        |        | 0.00             |        |        | 0.00      |        |        |
| Curb Present                 |                |        |        | No               |        |        | No               |        |        | No        |        |        |
| Crosswalk                    | No             |        |        | Yes              |        |        | No               |        |        | No        |        |        |

**Volumes**

| Name  |        |        |        | SR-57 SB Ramps |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------|--------|--------|----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |        |        |        |                |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 0      | 0      | 0      | 764            | 0      | 619    | 0                | 1933   | 1154   | 0                | 2753   | 476    |
| Base Volume Adjustment Factor               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00   | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 0      | 0      | 0      | 764            | 0      | 619    | 0                | 1933   | 1154   | 0                | 2753   | 476    |
| Peak Hour Factor                            | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000 | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 0      | 0      | 0      | 191            | 0      | 155    | 0                | 483    | 289    | 0                | 688    | 119    |
| Total Analysis Volume [veh/h]               | 0      | 0      | 0      | 764            | 0      | 619    | 0                | 1933   | 1154   | 0                | 2753   | 476    |
| Presence of On-Street Parking               |        |        |        | No             |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0      | 0      | 0      | 0              | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |        | 0      |        |                | 0      |        |                  | 0      |        |                  | 0      |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Split | Permiss | Split | Permiss | Permiss | Unsigna | Permiss | Permiss | Unsigna |
|------------------------------|---------|---------|---------|-------|---------|-------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 0       | 0       | 0       | 7     | 0       | 0     | 0       | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |       |         |       |         |         |         |         |         |         |
| Lead / Lag                   | -       | -       | -       | Lead  | -       | -     | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0       | 0       | 0       | 6     | 0       | 0     | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0       | 0       | 0       | 30    | 0       | 0     | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 0.0     | 0.0     | 1.0   | 0.0     | 0.0   | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0       | 0       | 0       | 64    | 0       | 0     | 0       | 26      | 0       | 0       | 26      | 0       |
| Vehicle Extension [s]        | 0.0     | 0.0     | 0.0     | 3.0   | 0.0     | 0.0   | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 0       | 0       | 0     | 0       | 0     | 0       | 0       | 0       | 0       | 15      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 0.0     | 0.0     | 2.0   | 0.0     | 0.0   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Maximum Recall               |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Pedestrian Recall            |         |         |         | No    |         |       |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0   | 0.0     | 0.0   | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00  | 1.00    | 1.00  | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | C     | C     |
|---|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 28    | 28    | 28    | 54    | 54    |
| g / C, Green / Cycle                    | 0.31  | 0.31  | 0.31  | 0.60  | 0.60  |
| (v / s)_i Volume / Saturation Flow Rate | 0.26  | 0.26  | 0.24  | 0.34  | 0.48  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 5700  | 5700  |
| c, Capacity [veh/h]                     | 552   | 552   | 583   | 3445  | 3445  |
| d1, Uniform Delay [s]                   | 29.03 | 29.03 | 28.51 | 10.64 | 13.60 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 3.42  | 3.42  | 2.47  | 0.67  | 2.03  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.84   | 0.79   | 0.56   | 0.80   |
| d, Delay for Lane Group [s/veh]       | 32.45  | 32.45  | 30.98  | 11.31  | 15.63  |
| Lane Group LOS                        | C      | C      | C      | B      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 9.46   | 9.46   | 9.18   | 7.05   | 13.09  |
| 50th-Percentile Queue Length [ft/ln]  | 236.49 | 236.49 | 229.40 | 176.20 | 327.32 |
| 95th-Percentile Queue Length [veh/ln] | 14.50  | 14.50  | 14.14  | 11.40  | 19.03  |
| 95th-Percentile Queue Length [ft/ln]  | 362.59 | 362.59 | 353.59 | 285.04 | 475.67 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |       |       |       |      |       |       |      |
|---------------------------------|-------|------|------|-------|------|-------|-------|-------|------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 0.00  | 0.00 | 0.00 | 32.45 | 0.00 | 31.35 | 0.00  | 11.31 | 0.00 | 0.00  | 15.63 | 0.00 |
| Movement LOS                    |       |      |      | C     |      | C     |       | B     |      |       | B     |      |
| d_A, Approach Delay [s/veh]     | 0.00  |      |      | 31.96 |      |       | 11.31 |       |      | 15.63 |       |      |
| Approach LOS                    | A     |      |      | C     |      |       | B     |       |      | B     |       |      |
| d_I, Intersection Delay [s/veh] | 17.97 |      |      |       |      |       |       |       |      |       |       |      |
| Intersection LOS                | B     |      |      |       |      |       |       |       |      |       |       |      |
| Intersection V/C                | 0.811 |      |      |       |      |       |       |       |      |       |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 0.0   | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 0.00  | 34.63 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 0.000 | 2.468 | 0.000 | 0.000 |
| Crosswalk LOS  | F     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 0     | 1335  | 489   | 489   |
| d_b, Bicycle Delay [s]                                   | 44.96 | 4.98  | 25.65 | 25.65 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.132 | 3.842 | 2.623 | 3.074 |
| Bicycle LOS  | D     | D     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 17: SR-57 NB Ramps at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 40.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.887 |

**Intersection Setup**

| Name                         | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound     |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left           | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00          | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1              | 0      | 1      | 0               | 0      | 1      | 1                | 0      | 1      | 0                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00         | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00           | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00          |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00           |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No             |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes            |        |        | Yes             |        |        | No               |        |        | No               |        |        |

**Volumes**

| Name  | SR-57 NB Ramps |        |        | Shopping Center |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]                   | 1163           | 72     | 506    | 0               | 0      | 232    | 207              | 2145   | 430    | 0                | 2821   | 46     |
| Base Volume Adjustment Factor               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00           | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 1163           | 72     | 506    | 0               | 0      | 232    | 207              | 2145   | 430    | 0                | 2821   | 46     |
| Peak Hour Factor                            | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000         | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 291            | 18     | 127    | 0               | 0      | 58     | 52               | 536    | 108    | 0                | 705    | 12     |
| Total Analysis Volume [veh/h]               | 1163           | 72     | 506    | 0               | 0      | 232    | 207              | 2145   | 430    | 0                | 2821   | 46     |
| Presence of On-Street Parking               | No             |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0              | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0              |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Permiss | Split | Protecte | Permiss | Unsigna | Permiss | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|---------|-------|----------|---------|---------|---------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 0       | 4     | 5        | 2       | 0       | 0       | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |         |       |          |         |         |         |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -       | -     | Lead     | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 0       | 6     | 6        | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 0       | 30    | 30       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 0.0     | 1.0   | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0     | 37    | 0     | 0     | 0       | 12    | 19       | 71      | 0       | 0       | 52      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 0.0     | 3.0   | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 0       | 0     | 0        | 22      | 0       | 0       | 19      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       |         | No    |          | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 0.0     | 2.0   | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Maximum Recall               |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Pedestrian Recall            |       | No    |       |       |         | No    | No       | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0   | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | R     | L     | C     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 32    | 32    | 32    | 8     | 15    | 68    | 49    | 49    |
| g / C, Green / Cycle                    | 0.27  | 0.27  | 0.27  | 0.07  | 0.13  | 0.57  | 0.41  | 0.41  |
| (v / s)_i Volume / Saturation Flow Rate | 0.25  | 0.25  | 0.23  | 0.06  | 0.12  | 0.38  | 0.38  | 0.38  |
| s, saturation flow rate [veh/h]         | 3500  | 1800  | 1900  | 3800  | 1800  | 5700  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 932   | 479   | 506   | 254   | 225   | 3231  | 2328  | 776   |
| d1, Uniform Delay [s]                   | 42.78 | 42.80 | 42.08 | 55.65 | 51.90 | 18.05 | 33.73 | 33.73 |
| k, delay calibration                    | 0.11  | 0.38  | 0.34  | 0.11  | 0.11  | 0.50  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.29  | 20.82 | 13.49 | 12.29 | 14.15 | 1.09  | 7.66  | 18.32 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.92   | 0.92   | 0.87   | 0.91   | 0.92   | 0.66   | 0.92   | 0.92   |
| d, Delay for Lane Group [s/veh]       | 47.07  | 63.62  | 55.57  | 67.94  | 66.05  | 19.15  | 41.38  | 52.05  |
| Lane Group LOS                        | D      | E      | E      | E      | E      | B      | D      | D      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | Yes    | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 12.80  | 15.39  | 14.30  | 3.92   | 7.03   | 13.59  | 21.04  | 23.34  |
| 50th-Percentile Queue Length [ft/ln]  | 319.98 | 384.68 | 357.47 | 98.01  | 175.81 | 339.80 | 526.11 | 583.56 |
| 95th-Percentile Queue Length [veh/ln] | 18.67  | 21.82  | 20.50  | 7.06   | 11.38  | 19.64  | 28.57  | 31.27  |
| 95th-Percentile Queue Length [ft/ln]  | 466.66 | 545.51 | 512.50 | 176.42 | 284.54 | 490.95 | 714.19 | 781.64 |

**Movement, Approach, & Intersection Results**

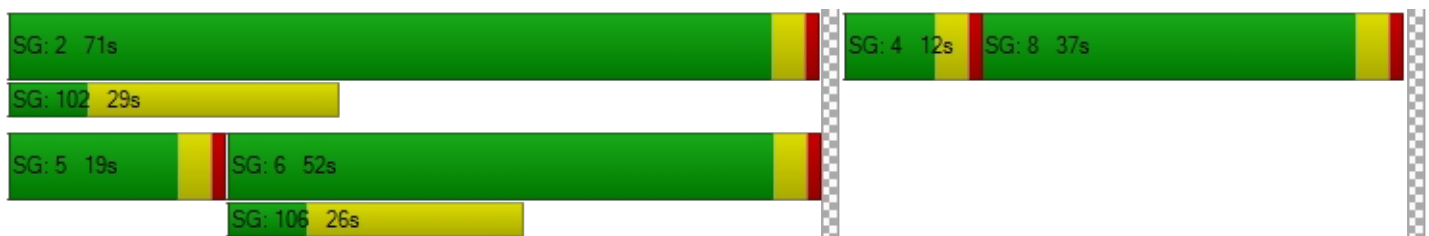
|                                 |       |       |       |       |      |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 51.32 | 63.62 | 56.69 | 0.00  | 0.00 | 67.94 | 66.05 | 19.15 | 0.00 | 0.00  | 43.92 | 52.05 |
| Movement LOS                    | D     | E     | E     |       |      | E     | E     | B     |      |       | D     | D     |
| d_A, Approach Delay [s/veh]     | 53.42 |       |       | 67.94 |      |       | 23.27 |       |      | 44.05 |       |       |
| Approach LOS                    | D     |       |       | E     |      |       | C     |       |      | D     |       |       |
| d_I, Intersection Delay [s/veh] | 40.29 |       |       |       |      |       |       |       |      |       |       |       |
| Intersection LOS                | D     |       |       |       |      |       |       |       |      |       |       |       |
| Intersection V/C                | 0.887 |       |       |       |      |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.51 | 49.51 | 0.00  | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.653 | 2.135 | 0.000 | 0.000 |
| Crosswalk LOS  | B     | B     | F     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 550   | 133   | 1117  | 800   |
| d_b, Bicycle Delay [s]                                   | 31.54 | 52.27 | 11.71 | 21.60 |
| I_b,int, Bicycle LOS Score for Intersection              | 4.432 | 1.560 | 2.853 | 2.742 |
| Bicycle LOS  | E     | A     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**  
**Intersection 18: Associated Roadway at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 48.9  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.947 |

**Intersection Setup**

| Name                         | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound         |        |        | Southbound         |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T              |        |        | T T T              |        |        | T T T            |        |        | T T T T          |        |        |
| Turning Movement             | Left               | Thru   | Right  | Left               | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00              | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                  | 0      | 0      | 1                  | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00             | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00               | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00              |        |        | 30.00              |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00               |        |        | 0.00               |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                 |        |        | No                 |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes                |        |        | Yes                |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Associated Roadway |        |        | Associated Roadway |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|--------------------|--------|--------|--------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   | 252                | 299    | 102    | 335                | 402    | 294    | 311              | 2179   | 161    | 210              | 2004   | 213    |
| Base Volume Input [veh/h]                   | 252                | 299    | 102    | 335                | 402    | 294    | 311              | 2179   | 161    | 210              | 2004   | 213    |
| Base Volume Adjustment Factor               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00               | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 252                | 299    | 102    | 335                | 402    | 294    | 311              | 2179   | 161    | 210              | 2004   | 213    |
| Peak Hour Factor                            | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000             | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 63                 | 75     | 26     | 84                 | 101    | 74     | 78               | 545    | 40     | 53               | 501    | 53     |
| Total Analysis Volume [veh/h]               | 252                | 299    | 102    | 335                | 402    | 294    | 311              | 2179   | 161    | 210              | 2004   | 213    |
| Presence of On-Street Parking               | No                 |        | No     | No                 |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                  | 0      | 0      | 0                  | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                  |        |        | 0                  |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 13       | 39      | 0       | 16       | 42      | 0       | 26       | 46      | 0       | 19       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 28      | 0       | 0        | 29      | 0       | 0        | 26      | 0       | 0        | 25      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 9     | 25    | 25    | 12    | 28    | 28    | 22    | 52    | 52    | 15    | 45    | 45    |
| g / C, Green / Cycle                    | 0.08  | 0.21  | 0.21  | 0.10  | 0.23  | 0.23  | 0.18  | 0.43  | 0.43  | 0.13  | 0.37  | 0.37  |
| (v / s)_i Volume / Saturation Flow Rate | 0.07  | 0.11  | 0.10  | 0.10  | 0.21  | 0.15  | 0.17  | 0.41  | 0.42  | 0.12  | 0.29  | 0.30  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  | 1800  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 267   | 399   | 399   | 354   | 446   | 446   | 331   | 1634  | 817   | 227   | 2122  | 707   |
| d1, Uniform Delay [s]                   | 55.22 | 42.12 | 41.73 | 53.67 | 44.63 | 41.63 | 48.39 | 32.81 | 33.69 | 51.96 | 33.29 | 33.80 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.22  | 0.11  | 0.22  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 15.26 | 1.06  | 0.91  | 12.79 | 12.59 | 1.67  | 21.49 | 12.27 | 26.70 | 14.98 | 2.87  | 9.50  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.94   | 0.52   | 0.48   | 0.95   | 0.90   | 0.66   | 0.94   | 0.94   | 0.98   | 0.93   | 0.78   | 0.81   |
| d, Delay for Lane Group [s/veh]       | 70.48  | 43.19  | 42.63  | 66.47  | 57.22  | 43.30  | 69.88  | 45.08  | 60.38  | 66.94  | 36.16  | 43.30  |
| Lane Group LOS                        | E      | D      | D      | E      | E      | D      | E      | D      | E      | E      | D      | D      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.36   | 5.62   | 5.13   | 5.65   | 13.10  | 8.08   | 11.13  | 23.63  | 28.28  | 7.19   | 14.49  | 16.53  |
| 50th-Percentile Queue Length [ft/ln]  | 109.00 | 140.38 | 128.17 | 141.27 | 327.56 | 202.03 | 278.17 | 590.77 | 706.93 | 179.78 | 362.25 | 413.24 |
| 95th-Percentile Queue Length [veh/ln] | 7.78   | 9.50   | 8.84   | 9.55   | 19.04  | 12.74  | 16.60  | 31.60  | 37.00  | 11.59  | 20.73  | 23.20  |
| 95th-Percentile Queue Length [ft/ln]  | 194.61 | 237.53 | 221.00 | 238.73 | 475.97 | 318.58 | 414.93 | 790.08 | 924.96 | 289.73 | 518.32 | 579.94 |

**Movement, Approach, & Intersection Results**

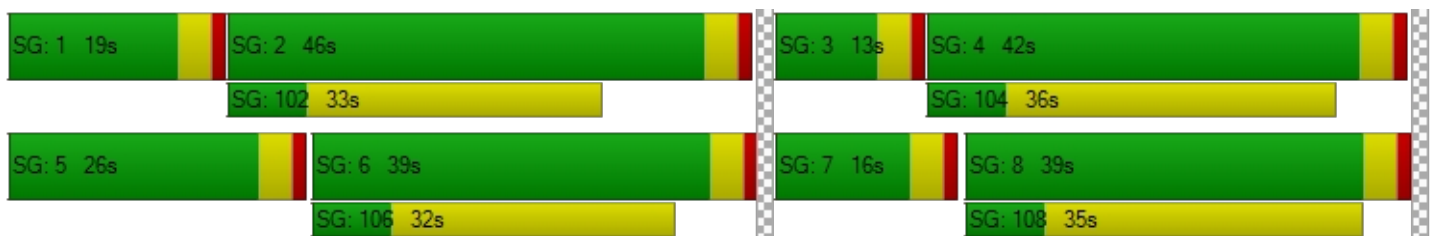
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 70.48 | 43.02 | 42.63 | 66.47 | 57.22 | 43.30 | 69.88 | 49.57 | 60.38 | 66.94 | 37.43 | 43.30 |
| Movement LOS                    | E     | D     | D     | E     | E     | D     | E     | D     | E     | E     | D     | D     |
| d_A, Approach Delay [s/veh]     | 53.56 |       |       | 56.25 |       |       | 52.61 |       |       | 40.50 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | D     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 48.91 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.947 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.54 | 49.54 | 49.54 | 49.54 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.592 | 2.768 | 3.373 | 3.354 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 583   | 633   | 700   | 583   |
| d_b, Bicycle Delay [s]                                   | 30.13 | 28.04 | 25.38 | 30.13 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.098 | 3.261 | 3.018 | 2.561 |
| Bicycle LOS  | B     | C     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 19: Castlegate Lane/Placentia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 28.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.848 |

**Intersection Setup**

| Name                         | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound       |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Turning Movement             | Left             | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00            | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                | 0      | 1      | 1               | 0      | 0      | 1                | 0      | 1      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00           | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00             | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00            |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00             |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No               |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes              |        |        | Yes             |        |        | No               |        |        | Yes              |        |        |

**Volumes**

| Name  | Placentia Avenue |        |        | Castlegate Lane |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                  |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 295              | 54     | 310    | 29              | 26     | 16     | 22               | 2195   | 323    | 268              | 2263   | 66     |
| Base Volume Adjustment Factor               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00             | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 295              | 54     | 310    | 29              | 26     | 16     | 22               | 2195   | 323    | 268              | 2263   | 66     |
| Peak Hour Factor                            | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000           | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 74               | 14     | 78     | 7               | 7      | 4      | 6                | 549    | 81     | 67               | 566    | 17     |
| Total Analysis Volume [veh/h]               | 295              | 54     | 310    | 29              | 26     | 16     | 22               | 2195   | 323    | 268              | 2263   | 66     |
| Presence of On-Street Parking               | No               |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 28    | 0     | 0     | 10    | 0     | 10       | 32      | 0       | 35       | 57      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 15    | 0     | 0     | 0     | 0     | 0        | 21      | 0       | 0        | 14      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | L     | C     | R     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 20    | 20    | 20    | 5     | 5     | 3     | 46    | 46    | 18    | 61    | 61    |
| g / C, Green / Cycle                    | 0.19  | 0.19  | 0.19  | 0.05  | 0.05  | 0.03  | 0.44  | 0.44  | 0.17  | 0.58  | 0.58  |
| (v / s)_i Volume / Saturation Flow Rate | 0.10  | 0.10  | 0.16  | 0.02  | 0.02  | 0.01  | 0.39  | 0.17  | 0.15  | 0.40  | 0.42  |
| s, saturation flow rate [veh/h]         | 1800  | 1800  | 1900  | 1800  | 1900  | 1800  | 5700  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 335   | 335   | 354   | 92    | 97    | 51    | 2511  | 837   | 306   | 2213  | 1106  |
| d1, Uniform Delay [s]                   | 38.50 | 38.56 | 41.58 | 48.12 | 48.41 | 50.25 | 26.76 | 19.82 | 42.54 | 15.35 | 15.82 |
| k, delay calibration                    | 0.11  | 0.11  | 0.14  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 1.23  | 1.27  | 8.46  | 1.95  | 3.05  | 5.74  | 4.61  | 1.34  | 7.86  | 1.80  | 4.09  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |       |       |       |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|-------|-------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.52   | 0.52   | 0.88   | 0.32  | 0.43  | 0.43  | 0.87   | 0.39   | 0.88   | 0.69   | 0.72   |
| d, Delay for Lane Group [s/veh]       | 39.74  | 39.82  | 50.04  | 50.07 | 51.46 | 55.99 | 31.36  | 21.17  | 50.40  | 17.15  | 19.92  |
| Lane Group LOS                        | D      | D      | D      | D     | D     | E     | C      | C      | D      | B      | B      |
| Critical Lane Group                   | No     | No     | Yes    | No    | Yes   | No    | Yes    | No     | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 4.11   | 4.17   | 8.55   | 0.78  | 1.15  | 0.65  | 17.07  | 5.54   | 7.39   | 12.46  | 14.08  |
| 50th-Percentile Queue Length [ft/ln]  | 102.82 | 104.34 | 213.80 | 19.54 | 28.71 | 16.22 | 426.67 | 138.61 | 184.75 | 311.53 | 352.00 |
| 95th-Percentile Queue Length [veh/ln] | 7.40   | 7.51   | 13.35  | 1.41  | 2.07  | 1.17  | 23.84  | 9.41   | 11.85  | 18.25  | 20.23  |
| 95th-Percentile Queue Length [ft/ln]  | 185.08 | 187.82 | 333.70 | 35.17 | 51.67 | 29.19 | 596.04 | 235.14 | 296.21 | 456.27 | 505.85 |

**Movement, Approach, & Intersection Results**

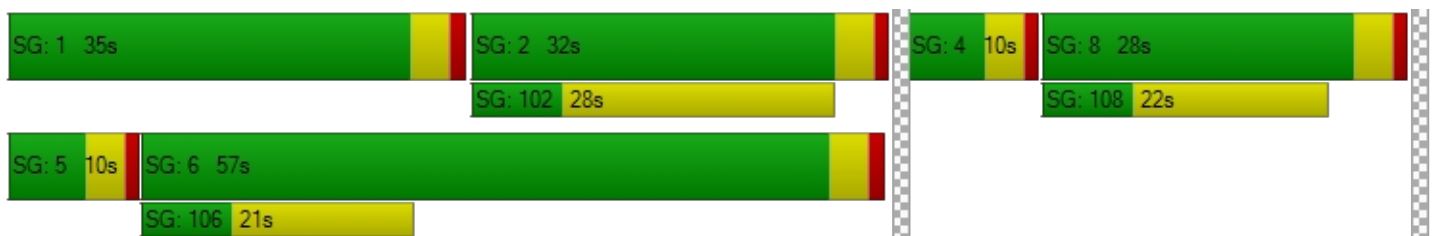
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 39.77 | 39.82 | 50.04 | 50.07 | 51.46 | 51.46 | 55.99 | 31.36 | 21.17 | 50.40 | 18.05 | 19.92 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | E     | C     | C     | D     | B     | B     |
| d_A, Approach Delay [s/veh]     | 44.61 |       |       | 50.89 |       |       | 30.28 |       |       | 21.43 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 28.22 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.848 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.11 | 42.11 | 0.00  | 42.11 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.449 | 2.017 | 0.000 | 3.316 |
| Crosswalk LOS  | B     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 457   | 114   | 533   | 1009  |
| d_b, Bicycle Delay [s]                                   | 31.27 | 46.70 | 28.26 | 12.90 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.647 | 1.677 | 2.957 | 2.988 |
| Bicycle LOS  | B     | A     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 20: Kraemer Boulevard at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 41.8  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.884 |

**Intersection Setup**

| Name                         | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T O T             |        |        | T O T             |        |        | T O T            |        |        | T O T            |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 0      | 1                 | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Kraemer Boulevard |        |        | Kraemer Boulevard |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                   |        |        |                   |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 418               | 712    | 118    | 300               | 547    | 134    | 248              | 1639   | 251    | 211              | 1807   | 364    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 418               | 712    | 118    | 300               | 547    | 134    | 248              | 1639   | 251    | 211              | 1807   | 364    |
| Peak Hour Factor                            | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 105               | 178    | 30     | 75                | 137    | 34     | 62               | 410    | 63     | 53               | 452    | 91     |
| Total Analysis Volume [veh/h]               | 418               | 712    | 118    | 300               | 547    | 134    | 248              | 1639   | 251    | 211              | 1807   | 364    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 23       | 38      | 0       | 15       | 30      | 0       | 13       | 50      | 0       | 12       | 49      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 19      | 0       | 0        | 19      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | R     | L     | C     | C     | L     | C     | C     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 16    | 28    | 28    | 11    | 23    | 23    | 9     | 52    | 52    | 8     | 51    | 51    |
| g / C, Green / Cycle                    | 0.14  | 0.25  | 0.25  | 0.10  | 0.20  | 0.20  | 0.08  | 0.45  | 0.45  | 0.07  | 0.44  | 0.44  |
| (v / s)_i Volume / Saturation Flow Rate | 0.12  | 0.22  | 0.21  | 0.09  | 0.14  | 0.07  | 0.07  | 0.33  | 0.33  | 0.06  | 0.38  | 0.38  |
| s, saturation flow rate [veh/h]         | 3500  | 1900  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 488   | 468   | 468   | 339   | 775   | 387   | 279   | 1698  | 849   | 248   | 1665  | 833   |
| d1, Uniform Delay [s]                   | 48.43 | 42.11 | 41.57 | 51.38 | 42.63 | 39.27 | 52.50 | 26.38 | 26.32 | 52.89 | 29.37 | 29.32 |
| k, delay calibration                    | 0.11  | 0.28  | 0.26  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.46  | 15.38 | 10.76 | 7.72  | 1.20  | 0.53  | 9.51  | 2.99  | 5.74  | 7.92  | 6.51  | 11.81 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.86   | 0.91   | 0.87   | 0.89   | 0.71   | 0.35   | 0.89   | 0.74   | 0.74   | 0.85   | 0.87   | 0.87   |
| d, Delay for Lane Group [s/veh]       | 52.89  | 57.48  | 52.33  | 59.09  | 43.83  | 39.80  | 62.02  | 29.37  | 32.06  | 60.81  | 35.87  | 41.13  |
| Lane Group LOS                        | D      | E      | D      | E      | D      | D      | E      | C      | C      | E      | D      | D      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | No     | No     | Yes    | No     | No     | No     | Yes    | No     |
| 50th-Percentile Queue Length [veh/ln] | 6.15   | 13.59  | 12.33  | 4.63   | 7.34   | 3.31   | 3.91   | 14.65  | 15.21  | 3.29   | 19.11  | 20.26  |
| 50th-Percentile Queue Length [ft/ln]  | 153.78 | 339.78 | 308.15 | 115.75 | 183.44 | 82.75  | 97.82  | 366.36 | 380.20 | 82.15  | 477.85 | 506.52 |
| 95th-Percentile Queue Length [veh/ln] | 10.22  | 19.64  | 18.08  | 8.16   | 11.78  | 5.96   | 7.04   | 20.93  | 21.60  | 5.91   | 26.28  | 27.64  |
| 95th-Percentile Queue Length [ft/ln]  | 255.47 | 490.93 | 452.10 | 203.97 | 294.50 | 148.95 | 176.07 | 523.31 | 540.09 | 147.87 | 657.10 | 691.07 |

**Movement, Approach, & Intersection Results**

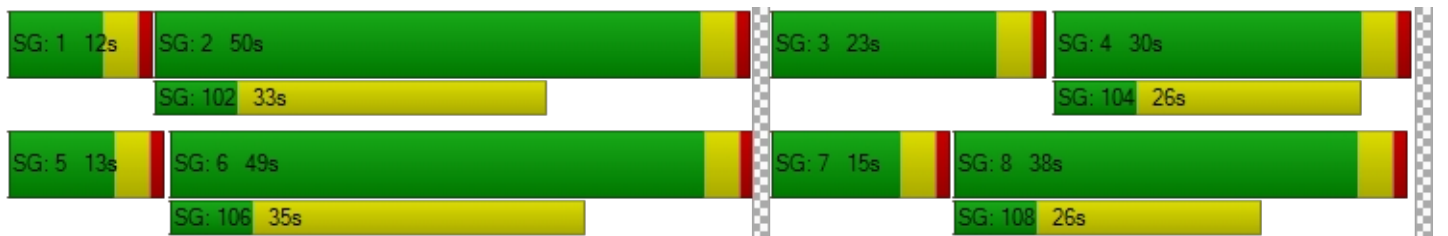
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.89 | 55.40 | 52.33 | 59.09 | 43.83 | 39.80 | 62.02 | 29.99 | 32.06 | 60.81 | 36.92 | 41.13 |
| Movement LOS                    | D     | E     | D     | E     | D     | D     | E     | C     | C     | E     | D     | D     |
| d_A, Approach Delay [s/veh]     | 54.27 |       |       | 47.95 |       |       | 33.95 |       |       | 39.68 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 41.76 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.884 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 47.07 |  |  | 47.07 |  |  | 47.07 |  |  | 47.07 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.831 |  |  | 2.927 |  |  | 3.285 |  |  | 3.278 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | C     |  |  | C     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 591   |  |  | 452   |  |  | 799   |  |  | 782   |  |  |
| d_b, Bicycle Delay [s]                                   | 28.56 |  |  | 34.48 |  |  | 20.73 |  |  | 21.34 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.589 |  |  | 2.369 |  |  | 2.736 |  |  | 2.870 |  |  |
| Bicycle LOS  | B     |  |  | B     |  |  | B     |  |  | C     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 21: Valencia Avenue at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 26.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.658 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T            |        |        | T T T            |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes              |        |        | Yes              |        |        |



**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |                 |        |        |                 |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 131             | 318    | 145    | 245             | 256    | 159    | 282              | 2045   | 171    | 189              | 1488   | 161    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 131             | 318    | 145    | 245             | 256    | 159    | 282              | 2045   | 171    | 189              | 1488   | 161    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 33              | 80     | 36     | 61              | 64     | 40     | 71               | 511    | 43     | 47               | 372    | 40     |
| Total Analysis Volume [veh/h]               | 131             | 318    | 145    | 245             | 256    | 159    | 282              | 2045   | 171    | 189              | 1488   | 161    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 11       | 46      | 0       | 13       | 48      | 0       | 17       | 45      | 0       | 11       | 39      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 35      | 0       | 0        | 37      | 0       | 0        | 26      | 0       | 0        | 28      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | R    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115  | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 6     | 12    | 12    | 9     | 15    | 15    | 11    | 71    | 71   | 7     | 66    | 66    |
| g / C, Green / Cycle                    | 0.05  | 0.11  | 0.11  | 0.08  | 0.13  | 0.13  | 0.10  | 0.61  | 0.61 | 0.06  | 0.58  | 0.58  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.08  | 0.08  | 0.07  | 0.07  | 0.08  | 0.08  | 0.36  | 0.09 | 0.05  | 0.26  | 0.08  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 3800  | 1900  | 3500  | 5700  | 1900 | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 190   | 412   | 206   | 276   | 506   | 253   | 345   | 3488  | 1163 | 216   | 3278  | 1093  |
| d1, Uniform Delay [s]                   | 53.46 | 49.91 | 49.51 | 52.49 | 46.37 | 47.19 | 50.87 | 13.51 | 9.52 | 53.56 | 14.06 | 11.35 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.39  | 3.09  | 4.33  | 9.34  | 0.79  | 2.57  | 4.80  | 0.73  | 0.27 | 10.73 | 0.46  | 0.28  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |        |        |        |        |        |       |        |        |       |
|---------------------------------------|-------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|
| X, volume / capacity                  | 0.69  | 0.77   | 0.70   | 0.89   | 0.51   | 0.63   | 0.82   | 0.59   | 0.15  | 0.88   | 0.45   | 0.15  |
| d, Delay for Lane Group [s/veh]       | 57.85 | 53.00  | 53.85  | 61.83  | 47.15  | 49.76  | 55.66  | 14.24  | 9.79  | 64.29  | 14.51  | 11.64 |
| Lane Group LOS                        | E     | D      | D      | E      | D      | D      | E      | B      | A     | E      | B      | B     |
| Critical Lane Group                   | No    | Yes    | No     | Yes    | No     | No     | No     | Yes    | No    | Yes    | No     | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.98  | 4.62   | 4.27   | 3.86   | 3.46   | 4.49   | 4.21   | 10.32  | 1.87  | 3.03   | 7.30   | 1.96  |
| 50th-Percentile Queue Length [ft/ln]  | 49.42 | 115.53 | 106.72 | 96.42  | 86.56  | 112.20 | 105.17 | 258.02 | 46.72 | 75.75  | 182.47 | 49.07 |
| 95th-Percentile Queue Length [veh/ln] | 3.56  | 8.15   | 7.66   | 6.94   | 6.23   | 7.96   | 7.57   | 15.59  | 3.36  | 5.45   | 11.73  | 3.53  |
| 95th-Percentile Queue Length [ft/ln]  | 88.96 | 203.67 | 191.43 | 173.55 | 155.81 | 199.06 | 189.27 | 389.74 | 84.10 | 136.35 | 293.23 | 88.33 |

**Movement, Approach, & Intersection Results**

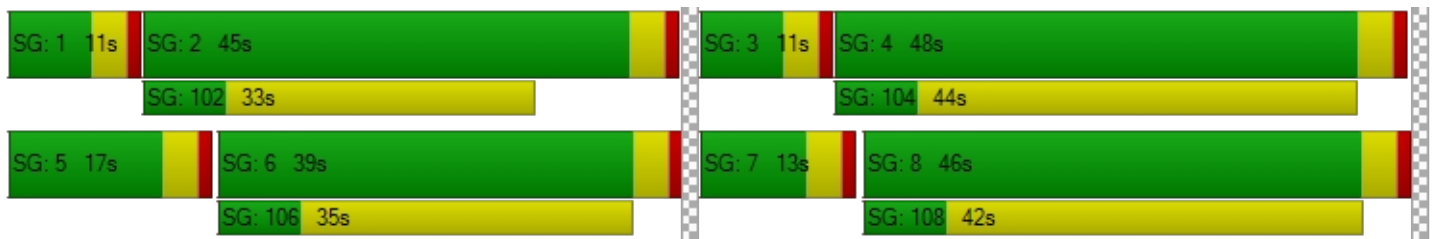
|                                 |       |       |       |       |       |       |       |       |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 57.85 | 53.00 | 53.85 | 61.83 | 47.15 | 49.76 | 55.66 | 14.24 | 9.79 | 64.29 | 14.51 | 11.64 |
| Movement LOS                    | E     | D     | D     | E     | D     | D     | E     | B     | A    | E     | B     | B     |
| d_A, Approach Delay [s/veh]     | 54.28 |       |       | 53.23 |       |       | 18.61 |       |      | 19.38 |       |       |
| Approach LOS                    | D     |       |       | D     |       |       | B     |       |      | B     |       |       |
| d_I, Intersection Delay [s/veh] | 26.74 |       |       |       |       |       |       |       |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |      |       |       |       |
| Intersection V/C                | 0.658 |       |       |       |       |       |       |       |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.774 | 2.804 | 3.324 | 3.324 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 730   | 765   | 713   | 608   |
| d_b, Bicycle Delay [s]                                   | 23.19 | 21.93 | 23.83 | 27.84 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.050 | 2.104 | 2.934 | 2.571 |
| Bicycle LOS  | B     | B     | C     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 241.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.145 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 0      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | Yes              |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |            |        |        |            |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 306        | 657    | 143    | 1040       | 549    | 33     | 91               | 2005   | 315    | 176              | 1570   | 896    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 306        | 657    | 143    | 1040       | 549    | 33     | 91               | 2005   | 315    | 176              | 1570   | 896    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 77         | 164    | 36     | 260        | 137    | 8      | 23               | 501    | 79     | 44               | 393    | 224    |
| Total Analysis Volume [veh/h]               | 306        | 657    | 143    | 1040       | 549    | 33     | 91               | 2005   | 315    | 176              | 1570   | 896    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 16       | 53      | 0       | 12       | 49      | 0       | 10       | 45      | 0       | 10       | 45      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 42      | 0       | 0        | 36      | 0       | 0        | 34      | 0       | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L       | C     | R     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00    | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00    | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 12    | 24    | 24    | 8       | 20    | 20    | 6     | 66    | 66    | 6     | 66    | 66    |
| g / C, Green / Cycle                    | 0.10  | 0.20  | 0.20  | 0.07    | 0.17  | 0.17  | 0.05  | 0.55  | 0.55  | 0.05  | 0.55  | 0.55  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.17  | 0.08  | 0.30    | 0.14  | 0.02  | 0.05  | 0.41  | 0.41  | 0.05  | 0.28  | 0.47  |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500    | 3800  | 1900  | 1800  | 3800  | 1900  | 3500  | 5700  | 1900  |
| c, Capacity [veh/h]                     | 352   | 767   | 384   | 236     | 641   | 320   | 91    | 2078  | 1039  | 178   | 3117  | 1039  |
| d1, Uniform Delay [s]                   | 53.22 | 46.24 | 41.36 | 55.99   | 48.50 | 42.22 | 56.97 | 20.75 | 20.88 | 56.96 | 17.02 | 23.33 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.15    | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 6.63  | 2.90  | 0.60  | 1538.45 | 3.44  | 0.14  | 42.81 | 2.44  | 4.95  | 29.23 | 0.58  | 9.43  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00    | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |         |        |       |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|---------|--------|-------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 0.87   | 0.86   | 0.37   | 4.41    | 0.86   | 0.10  | 1.00   | 0.74   | 0.75   | 0.99   | 0.50   | 0.86   |
| d, Delay for Lane Group [s/veh]       | 59.85  | 49.13  | 41.96  | 1594.44 | 51.94  | 42.36 | 99.78  | 23.19  | 25.83  | 86.19  | 17.60  | 32.76  |
| Lane Group LOS                        | E      | D      | D      | F       | D      | D     | F      | C      | C      | F      | B      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes     | No     | No    | Yes    | No     | No     | No     | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 4.87   | 9.73   | 3.73   | 53.93   | 8.28   | 0.85  | 3.84   | 16.54  | 17.50  | 3.39   | 8.98   | 23.41  |
| 50th-Percentile Queue Length [ft/ln]  | 121.74 | 243.35 | 93.35  | 1348.33 | 206.91 | 21.17 | 96.11  | 413.42 | 437.51 | 84.69  | 224.53 | 585.22 |
| 95th-Percentile Queue Length [veh/ln] | 8.49   | 14.85  | 6.72   | 80.90   | 12.99  | 1.52  | 6.92   | 23.21  | 24.36  | 6.10   | 13.90  | 31.34  |
| 95th-Percentile Queue Length [ft/ln]  | 212.22 | 371.26 | 168.02 | 2022.38 | 324.86 | 38.10 | 173.01 | 580.15 | 609.03 | 152.45 | 347.40 | 783.59 |



**Movement, Approach, & Intersection Results**

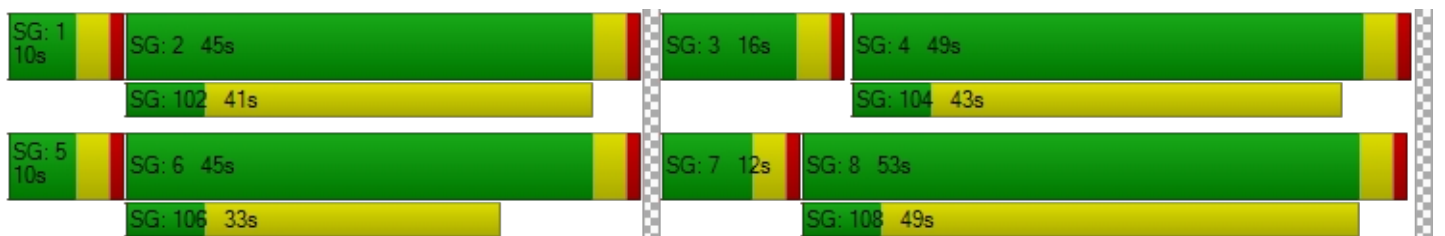
|                                 |        |       |       |         |       |       |       |       |       |       |       |       |
|---------------------------------|--------|-------|-------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 59.85  | 49.13 | 41.96 | 1594.44 | 51.94 | 42.36 | 99.78 | 23.80 | 25.83 | 86.19 | 17.60 | 32.76 |
| Movement LOS                    | E      | D     | D     | F       | D     | D     | F     | C     | C     | F     | B     | C     |
| d_A, Approach Delay [s/veh]     | 51.17  |       |       | 1040.77 |       |       | 26.93 |       |       | 27.31 |       |       |
| Approach LOS                    | D      |       |       | F       |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 241.85 |       |       |         |       |       |       |       |       |       |       |       |
| Intersection LOS                | F      |       |       |         |       |       |       |       |       |       |       |       |
| Intersection V/C                | 1.145  |       |       |         |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.907 | 3.063 | 3.209 | 3.495 |
| Crosswalk LOS  | C     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 816   | 750   | 683   | 683   |
| d_b, Bicycle Delay [s]                                   | 21.02 | 23.45 | 26.02 | 26.02 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.472 | 2.898 | 2.886 | 3.013 |
| Bicycle LOS  | B     | C     | C     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 24: Driveway A at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.6   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.397 |

**Intersection Setup**

| Name                         | Driveway A |        |        | Driveway A |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇈         |        |        | ⇈⇐         |        |        | ⇈⇈⇈          |        |        | ⇈⇈⇈          |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 0      | 1          | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Driveway A |        |        | Driveway A |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------|--------|--------|------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 77         | 0      | 4      | 15         | 0      | 22     | 37           | 1572   | 109    | 5            | 804    | 25     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 77         | 0      | 4      | 15         | 0      | 22     | 37           | 1572   | 109    | 5            | 804    | 25     |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 19         | 0      | 1      | 4          | 0      | 6      | 9            | 393    | 27     | 1            | 201    | 6      |
| Total Analysis Volume [veh/h]               | 77         | 0      | 4      | 15         | 0      | 22     | 37           | 1572   | 109    | 5            | 804    | 25     |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 35      | 0       | 0       | 35      | 0       | 10       | 45      | 0       | 10       | 45      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 24      | 0       | 0       | 24      | 0       | 0        | 11      | 0       | 0        | 11      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90   | 90   | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 5     | 5     | 4     | 72   | 72   | 1     | 69   | 69   |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.06  | 0.06  | 0.04  | 0.80 | 0.80 | 0.01  | 0.77 | 0.77 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.00  | 0.01  | 0.01  | 0.02  | 0.29 | 0.30 | 0.00  | 0.14 | 0.15 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 3800 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 133   | 112   | 149   | 112   | 75    | 3035 | 1517 | 16    | 2912 | 1456 |
| d1, Uniform Delay [s]                   | 41.65 | 39.95 | 40.20 | 40.34 | 42.24 | 2.58 | 2.60 | 44.33 | 2.87 | 2.89 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.92  | 0.13  | 0.29  | 0.85  | 5.02  | 0.34 | 0.71 | 10.03 | 0.14 | 0.30 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.58  | 0.04  | 0.10  | 0.20  | 0.50  | 0.37  | 0.37  | 0.30  | 0.19  | 0.19  |
| d, Delay for Lane Group [s/veh]       | 45.57 | 40.08 | 40.50 | 41.18 | 47.26 | 2.93  | 3.31  | 54.36 | 3.01  | 3.19  |
| Lane Group LOS                        | D     | D     | D     | D     | D     | A     | A     | D     | A     | A     |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | No    | Yes   | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.81  | 0.09  | 0.32  | 0.49  | 0.90  | 1.82  | 2.01  | 0.16  | 0.99  | 1.10  |
| 50th-Percentile Queue Length [ft/ln]  | 45.18 | 2.17  | 8.12  | 12.16 | 22.53 | 45.45 | 50.27 | 3.89  | 24.80 | 27.40 |
| 95th-Percentile Queue Length [veh/ln] | 3.25  | 0.16  | 0.58  | 0.88  | 1.62  | 3.27  | 3.62  | 0.28  | 1.79  | 1.97  |
| 95th-Percentile Queue Length [ft/ln]  | 81.32 | 3.91  | 14.61 | 21.88 | 40.55 | 81.81 | 90.49 | 7.00  | 44.64 | 49.31 |

**Movement, Approach, & Intersection Results**

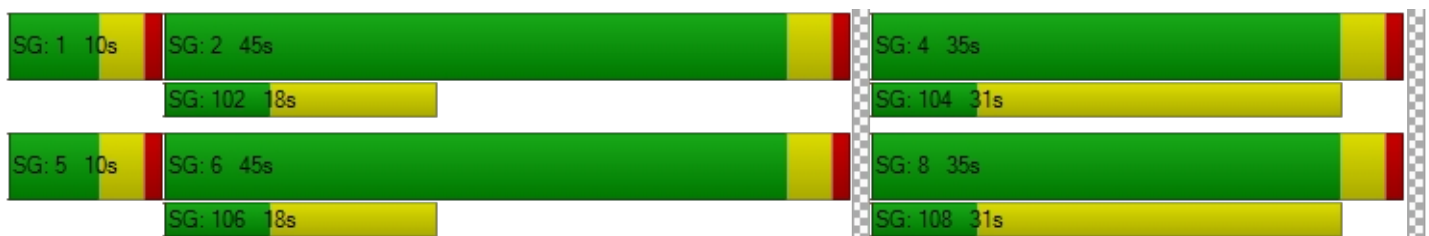
|                                 |       |       |       |       |       |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 45.57 | 40.08 | 40.08 | 40.50 | 41.18 | 41.18 | 47.26 | 3.04 | 3.31 | 54.36 | 3.07 | 3.19 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | A    | A    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 45.30 |       |       | 40.90 |       |       | 4.01  |      |      | 3.38  |      |      |
| Approach LOS                    | D     |       |       | D     |       |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 5.58  |       |       |       |       |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |       |       |       |      |      |       |      |      |
| Intersection V/C                | 0.397 |       |       |       |       |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 34.68 | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.003 | 1.972 | 3.068 | 2.953 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 689   | 689   | 911   | 911   |
| d_b, Bicycle Delay [s]                                   | 19.35 | 19.35 | 13.35 | 13.35 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.693 | 1.621 | 2.505 | 2.018 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 8.5   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.510 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound  |        |        | Westbound  |        |        |
| Lane Configuration           | ↵↻↵             |        |        | ↵↻↵             |        |        | ↵↻         |        |        | ↵↻         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left       | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1          | 0      | 0      | 1          | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 45.00           |        |        | 45.00           |        |        | 25.00      |        |        | 25.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00       |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No         |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes        |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |            |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 77              | 1437   | 41     | 41              | 873    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 77              | 1437   | 41     | 41              | 873    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 19              | 359    | 10     | 10              | 218    | 2      | 1          | 0      | 14     | 6          | 0      | 6      |
| Total Analysis Volume [veh/h]               | 77              | 1437   | 41     | 41              | 873    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No         |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 1        | 6       | 0       | 5        | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |         |         |         |         |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 13       | 51      | 0       | 10       | 48      | 0       | 0       | 29      | 0       | 0       | 29      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0       | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 11      | 0       | 0        | 11      | 0       | 0       | 18      | 0       | 0       | 18      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         |         | No      |         |         | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         |         | No      |         |         | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C    | C    | L     | C    | C    | L     | C     | L     | C     |
|---|-------|------|------|-------|------|------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90   | 90   | 90    | 90   | 90   | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 | 2.00  | 0.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 5     | 69   | 69   | 4     | 68   | 68   | 5     | 5     | 5     | 5     |
| g / C, Green / Cycle                    | 0.06  | 0.77 | 0.77 | 0.04  | 0.76 | 0.76 | 0.05  | 0.05  | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.39 | 0.39 | 0.02  | 0.23 | 0.23 | 0.00  | 0.03  | 0.01  | 0.01  |
| s, saturation flow rate [veh/h]         | 1800  | 1900 | 1900 | 1800  | 1900 | 1900 | 1800  | 1900  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 105   | 1463 | 1463 | 79    | 1436 | 1436 | 121   | 101   | 91    | 101   |
| d1, Uniform Delay [s]                   | 41.73 | 3.91 | 3.90 | 42.11 | 3.50 | 3.49 | 40.47 | 41.61 | 40.93 | 40.90 |
| k, delay calibration                    | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.63  | 1.26 | 1.24 | 5.17  | 0.55 | 0.55 | 0.11  | 4.74  | 1.52  | 1.21  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |       |       |       |       |       |       |       |
|---------------------------------------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.74  | 0.51   | 0.50   | 0.52  | 0.31  | 0.31  | 0.03  | 0.56  | 0.26  | 0.24  |
| d, Delay for Lane Group [s/veh]       | 51.37 | 5.17   | 5.14   | 47.28 | 4.05  | 4.04  | 40.58 | 46.35 | 42.44 | 42.11 |
| Lane Group LOS                        | D     | A      | A      | D     | A     | A     | D     | D     | D     | D     |
| Critical Lane Group                   | No    | Yes    | No     | Yes   | No    | No    | No    | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.89  | 3.14   | 3.11   | 0.97  | 1.66  | 1.66  | 0.09  | 1.35  | 0.55  | 0.55  |
| 50th-Percentile Queue Length [ft/ln]  | 47.22 | 78.48  | 77.65  | 24.19 | 41.53 | 41.40 | 2.20  | 33.66 | 13.75 | 13.63 |
| 95th-Percentile Queue Length [veh/ln] | 3.40  | 5.65   | 5.59   | 1.74  | 2.99  | 2.98  | 0.16  | 2.42  | 0.99  | 0.98  |
| 95th-Percentile Queue Length [ft/ln]  | 85.00 | 141.26 | 139.76 | 43.54 | 74.76 | 74.52 | 3.96  | 60.59 | 24.76 | 24.53 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |      |       |       |       |       |       |       |
|---------------------------------|-------|------|------|-------|------|------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 51.37 | 5.15 | 5.14 | 47.28 | 4.05 | 4.04 | 40.58 | 46.35 | 46.35 | 42.44 | 42.11 | 42.11 |
| Movement LOS                    | D     | A    | A    | D     | A    | A    | D     | D     | D     | D     | D     | D     |
| d_A, Approach Delay [s/veh]     | 7.44  |      |      | 5.97  |      |      | 45.97 |       |       | 42.28 |       |       |
| Approach LOS                    | A     |      |      | A     |      |      | D     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 8.46  |      |      |       |      |      |       |       |       |       |       |       |
| Intersection LOS                | A     |      |      |       |      |      |       |       |       |       |       |       |
| Intersection V/C                | 0.510 |      |      |       |      |      |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 34.68 |  |  | 34.68 |  |  | 34.68 |  |  | 34.68 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 3.067 |  |  | 3.003 |  |  | 1.978 |  |  | 1.975 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | A     |  |  | A     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1044  |  |  | 978   |  |  | 555   |  |  | 555   |  |  |
| d_b, Bicycle Delay [s]                                   | 10.28 |  |  | 11.76 |  |  | 23.48 |  |  | 23.48 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.842 |  |  | 2.319 |  |  | 1.659 |  |  | 1.639 |  |  |
| Bicycle LOS  | C     |  |  | B     |  |  | A     |  |  | A     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 3.1   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.443 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           | ↑↑         |        | ↵↑↑        |        | ↵↵         |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 40.00      |        | 40.00      |        | 25.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Curb Present                 | No         |        | No         |        | No         |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name  | Rose Drive |        | Rose Drive |        | Driveway C |        |
|---|------------|--------|------------|--------|------------|--------|
|   |            |        |            |        |            |        |
| Base Volume Input [veh/h]                   | 1412       | 47     | 75         | 1250   | 28         | 44     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                 | 1412       | 47     | 75         | 1250   | 28         | 44     |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 353        | 12     | 19         | 313    | 7          | 11     |
| Total Analysis Volume [veh/h]               | 1412       | 47     | 75         | 1250   | 28         | 44     |
| Presence of On-Street Parking               | No         | No     | No         | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0          | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0          | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        | 0          |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        | 0          |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]                 | 0          |        | 0          |        | 0          |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissive | Permissive | Permissive | Permissive | Split | Split |
|------------------------------|------------|------------|------------|------------|-------|-------|
| Signal Group                 | 6          | 0          | 0          | 2          | 7     | 0     |
| Auxiliary Signal Groups      |            |            |            |            |       |       |
| Lead / Lag                   | -          | -          | -          | -          | Lead  | -     |
| Minimum Green [s]            | 6          | 0          | 0          | 6          | 6     | 0     |
| Maximum Green [s]            | 30         | 0          | 0          | 30         | 30    | 0     |
| Amber [s]                    | 3.0        | 0.0        | 0.0        | 3.0        | 3.0   | 0.0   |
| All red [s]                  | 1.0        | 0.0        | 0.0        | 1.0        | 1.0   | 0.0   |
| Split [s]                    | 71         | 0          | 0          | 71         | 29    | 0     |
| Vehicle Extension [s]        | 3.0        | 0.0        | 0.0        | 3.0        | 3.0   | 0.0   |
| Walk [s]                     | 7          | 0          | 0          | 0          | 7     | 0     |
| Pedestrian Clearance [s]     | 11         | 0          | 0          | 0          | 18    | 0     |
| Delayed Vehicle Green [s]    | 0.0        | 0.0        | 0.0        | 0.0        | 0.0   | 0.0   |
| Rest In Walk                 | No         |            |            | No         | No    |       |
| I1, Start-Up Lost Time [s]   | 2.0        | 0.0        | 0.0        | 2.0        | 2.0   | 0.0   |
| I2, Clearance Lost Time [s]  | 2.0        | 0.0        | 0.0        | 2.0        | 2.0   | 0.0   |
| Minimum Recall               | No         |            |            | No         | No    |       |
| Maximum Recall               | No         |            |            | No         | No    |       |
| Pedestrian Recall            | No         |            |            | No         | No    |       |
| Detector Location [ft]       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0   | 0.0   |
| Detector Length [ft]         | 0.0        | 0.0        | 0.0        | 0.0        | 0.0   | 0.0   |
| I, Upstream Filtering Factor | 1.00       | 1.00       | 1.00       | 1.00       | 1.00  | 1.00  |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C    | C    | L    | C    | L     | R     |
|---|------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 100  | 100  | 100  | 100  | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 2.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 87   | 87   | 87   | 87   | 5     | 5     |
| g / C, Green / Cycle                    | 0.87 | 0.87 | 0.87 | 0.87 | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.38 | 0.38 | 0.04 | 0.33 | 0.02  | 0.02  |
| s, saturation flow rate [veh/h]         | 1900 | 1900 | 1800 | 3800 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 1649 | 1649 | 1437 | 3297 | 94    | 99    |
| d1, Uniform Delay [s]                   | 1.42 | 1.42 | 0.91 | 1.30 | 45.59 | 45.94 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.86 | 0.86 | 0.07 | 0.33 | 1.74  | 3.07  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |      |       |       |       |
|---------------------------------------|-------|-------|------|-------|-------|-------|
| X, volume / capacity                  | 0.44  | 0.44  | 0.05 | 0.38  | 0.30  | 0.44  |
| d, Delay for Lane Group [s/veh]       | 2.28  | 2.28  | 0.98 | 1.64  | 47.32 | 49.01 |
| Lane Group LOS                        | A     | A     | A    | A     | D     | D     |
| Critical Lane Group                   | Yes   | No    | No   | No    | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.79  | 0.79  | 0.05 | 0.46  | 0.72  | 1.15  |
| 50th-Percentile Queue Length [ft/ln]  | 19.69 | 19.69 | 1.34 | 11.52 | 17.96 | 28.77 |
| 95th-Percentile Queue Length [veh/ln] | 1.42  | 1.42  | 0.10 | 0.83  | 1.29  | 2.07  |
| 95th-Percentile Queue Length [ft/ln]  | 35.44 | 35.44 | 2.40 | 20.74 | 32.33 | 51.78 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 2.28  | 2.28 | 0.98 | 1.64 | 47.32 | 49.01 |
| Movement LOS                    | A     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 2.28  |      | 1.60 |      | 48.36 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 3.13  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.443 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 0.0   | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 0.00  | 39.59 | 39.59 |
| I_p,int, Pedestrian LOS Score for Intersection           | 0.000 | 3.028 | 2.104 |
| Crosswalk LOS  | F     | C     | B     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1340  | 1340  | 500   |
| d_b, Bicycle Delay [s]                                   | 5.44  | 5.44  | 28.11 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.763 | 2.653 | 1.560 |
| Bicycle LOS  | C     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





*APPENDIX D-VII*





**YEAR 2045 PLUS PROJECT WITH MITIGATION  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 124.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.933 |

**Intersection Setup**

| Name                         | Valencia Avenue   |        |        | Valencia Avenue   |        |        | Lambert Road  |        |        | Carbon Canyon Road  |        |        |
|------------------------------|---|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |  |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1      | 1   | 0      | 0      | 1   | 0      | 1      | 1   | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 | No  |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes   |        |        | Yes   |        |        | No  |        |        | Yes   |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 370             | 208    | 188    | 8               | 422    | 48     | 56           | 256    | 607    | 1069               | 912    | 2      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 370             | 208    | 188    | 8               | 422    | 48     | 56           | 256    | 607    | 1069               | 912    | 2      |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 0.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 93              | 52     | 0      | 2               | 106    | 12     | 14           | 64     | 152    | 267                | 228    | 1      |
| Total Analysis Volume [veh/h]               | 370             | 208    | 0      | 8               | 422    | 48     | 56           | 256    | 607    | 1069               | 912    | 2      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         | 2,8     |          |         |         |
| Lead / Lag                   | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6     | 6     | 0     | 6     | 6     | 0     | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 6     | 30    | 0     | 30    | 30    | 0     | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 1.0   | 0.0   | 1.0   | 1.0   | 0.0   | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10    | 42    | 0     | 10    | 14    | 0     | 11       | 36      | 36      | 28       | 53      | 0       |
| Vehicle Extension [s]        | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 31    | 0     | 0     | 0     | 0     | 0        | 25      | 25      | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R    | L     | C      | C      | L     | C     | R    | L      | C     | C     |
|---|-------|-------|-------|------|-------|--------|--------|-------|-------|------|--------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120  | 120   | 120    | 120    | 120   | 120   | 120  | 120    | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00   | 4.00   | 4.00  | 4.00  | 4.00 | 4.00   | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00   | 0.00   | 0.00  | 0.00  | 0.00 | 0.00   | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00   | 2.00   | 2.00  | 2.00  | 0.00 | 2.00   | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 18    | 18    | 18    | 18   | 10    | 10     | 10     | 5     | 52    | 88   | 24     | 71    | 71    |
| g / C, Green / Cycle                    | 0.15  | 0.15  | 0.15  | 0.15 | 0.08  | 0.08   | 0.08   | 0.04  | 0.43  | 0.73 | 0.20   | 0.59  | 0.59  |
| (v / s)_i Volume / Saturation Flow Rate | 0.11  | 0.11  | 0.10  | 0.00 | 0.00  | 0.13   | 0.12   | 0.03  | 0.04  | 0.32 | 0.31   | 0.16  | 0.17  |
| s, saturation flow rate [veh/h]         | 1750  | 1750  | 1900  | 1900 | 1800  | 1900   | 1900   | 1800  | 5700  | 1900 | 3500   | 3800  | 1900  |
| c, Capacity [veh/h]                     | 267   | 267   | 290   | 290  | 151   | 159    | 159    | 78    | 2451  | 1393 | 700    | 2231  | 1115  |
| d1, Uniform Delay [s]                   | 48.53 | 48.56 | 47.77 | 0.00 | 50.60 | 54.99  | 54.99  | 56.73 | 20.42 | 6.28 | 48.02  | 12.16 | 12.27 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11 | 0.11  | 0.11   | 0.11   | 0.11  | 0.50  | 0.50 | 0.17   | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  | 1.00 | 1.00   | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 3.87  | 3.93  | 2.35  | 0.00 | 0.14  | 229.07 | 211.74 | 11.87 | 0.09  | 0.99 | 239.34 | 0.30  | 0.63  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00   | 0.00   | 0.00  | 0.00  | 0.00 | 0.00   | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  | 1.00 | 1.00   | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00   | 1.00   | 1.00  | 1.00  | 1.00 | 1.00   | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |      |       |        |        |       |       |        |         |        |        |
|---------------------------------------|-------|-------|-------|------|-------|--------|--------|-------|-------|--------|---------|--------|--------|
| X, volume / capacity                  | 0.73  | 0.74  | 0.64  | 0.00 | 0.05  | 1.49   | 1.45   | 0.72  | 0.10  | 0.44   | 1.53    | 0.27   | 0.28   |
| d, Delay for Lane Group [s/veh]       | 52.40 | 52.49 | 50.11 | 0.00 | 50.74 | 284.06 | 266.73 | 68.60 | 20.50 | 7.27   | 287.36  | 12.45  | 12.90  |
| Lane Group LOS                        | D     | D     | D     | A    | D     | F      | F      | E     | C     | A      | F       | B      | B      |
| Critical Lane Group                   | No    | Yes   | No    | No   | No    | Yes    | No     | No    | No    | Yes    | Yes     | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 5.88  | 5.91  | 5.41  | 0.00 | 0.23  | 14.97  | 14.20  | 1.93  | 1.46  | 5.74   | 33.69   | 3.96   | 4.29   |
| 50th-Percentile Queue Length [ft/ln]  | 146.9 | 147.8 | 135.1 | 0.00 | 5.71  | 374.14 | 354.94 | 48.35 | 36.46 | 143.58 | 842.32  | 98.90  | 107.22 |
| 95th-Percentile Queue Length [veh/ln] | 9.86  | 9.90  | 9.22  | 0.00 | 0.41  | 24.11  | 22.90  | 3.48  | 2.62  | 9.67   | 51.93   | 7.12   | 7.69   |
| 95th-Percentile Queue Length [ft/ln]  | 246.4 | 247.5 | 230.5 | 0.00 | 10.28 | 602.64 | 572.51 | 87.03 | 65.62 | 241.84 | 1298.18 | 178.02 | 192.13 |

**Movement, Approach, & Intersection Results**

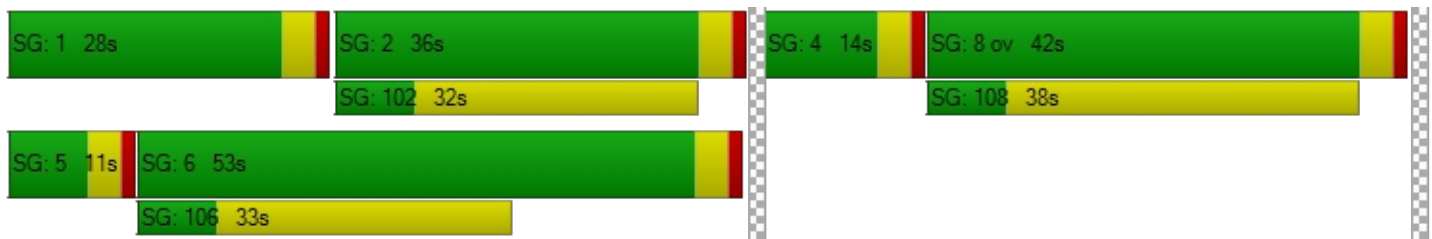
|                                 |        |       |      |        |        |        |       |       |      |        |       |       |
|---------------------------------|--------|-------|------|--------|--------|--------|-------|-------|------|--------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.44  | 50.37 | 0.00 | 50.74  | 276.51 | 266.73 | 68.60 | 20.50 | 7.27 | 287.36 | 12.61 | 12.90 |
| Movement LOS                    | D      | D     | A    | D      | F      | F      | E     | C     | A    | F      | B     | B     |
| d_A, Approach Delay [s/veh]     | 51.69  |       |      | 271.75 |        |        | 14.69 |       |      | 160.72 |       |       |
| Approach LOS                    | D      |       |      | F      |        |        | B     |       |      | F      |       |       |
| d_I, Intersection Delay [s/veh] | 124.30 |       |      |        |        |        |       |       |      |        |       |       |
| Intersection LOS                | F      |       |      |        |        |        |       |       |      |        |       |       |
| Intersection V/C                | 0.933  |       |      |        |        |        |       |       |      |        |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 0.00  | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.980 | 2.459 | 0.000 | 3.013 |
| Crosswalk LOS  | C     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 633   | 167   | 533   | 816   |
| d_b, Bicycle Delay [s]                                   | 28.03 | 50.43 | 32.28 | 21.02 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.036 | 1.954 | 2.065 | 2.650 |
| Bicycle LOS  | B     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 50.7  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.742 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 156             | 271    | 27     | 920             | 991    | 314    | 82           | 540    | 150    | 45         | 434    | 408    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 156             | 271    | 27     | 920             | 991    | 314    | 82           | 540    | 150    | 45         | 434    | 408    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 39              | 68     | 7      | 230             | 248    | 79     | 21           | 135    | 38     | 11         | 109    | 102    |
| Total Analysis Volume [veh/h]               | 156             | 271    | 27     | 920             | 991    | 314    | 82           | 540    | 150    | 45         | 434    | 408    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |



Version 2021 (SP 0-6)

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 29       | 38      | 0       | 33       | 42      | 0       | 10       | 39      | 0       | 10       | 39      | 39      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 28      | 28      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  |
| g_i, Effective Green Time [s]           | 12    | 28    | 28    | 29    | 44    | 44    | 6     | 43    | 43    | 5     | 42    | 75    |
| g / C, Green / Cycle                    | 0.10  | 0.23  | 0.23  | 0.24  | 0.37  | 0.37  | 0.05  | 0.35  | 0.35  | 0.04  | 0.35  | 0.62  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.08  | 0.08  | 0.26  | 0.34  | 0.34  | 0.02  | 0.19  | 0.17  | 0.03  | 0.11  | 0.21  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 187   | 440   | 440   | 846   | 702   | 702   | 166   | 672   | 672   | 71    | 1315  | 1180  |
| d1, Uniform Delay [s]                   | 52.80 | 38.50 | 38.42 | 45.53 | 36.36 | 36.36 | 55.76 | 30.88 | 30.38 | 56.78 | 28.99 | 10.99 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.33  | 0.33  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.38  | 0.46  | 0.44  | 44.69 | 15.20 | 15.20 | 2.25  | 3.00  | 2.59  | 8.79  | 0.67  | 0.80  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |       |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.84   | 0.34   | 0.33   | 1.09   | 0.93   | 0.93   | 0.49  | 0.53   | 0.49   | 0.63  | 0.33   | 0.35   |
| d, Delay for Lane Group [s/veh]       | 62.17  | 38.96  | 38.87  | 90.22  | 51.55  | 51.55  | 58.01 | 33.88  | 32.96  | 65.56 | 29.66  | 11.79  |
| Lane Group LOS                        | E      | D      | D      | F      | D      | D      | E     | C      | C      | E     | C      | B      |
| Critical Lane Group                   | Yes    | No     | No     | No     | Yes    | No     | No    | Yes    | No     | Yes   | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 5.10   | 3.78   | 3.68   | 17.73  | 20.98  | 20.98  | 1.26  | 8.78   | 8.00   | 1.52  | 4.76   | 5.33   |
| 50th-Percentile Queue Length [ft/ln]  | 127.48 | 94.43  | 92.10  | 443.36 | 524.44 | 524.44 | 31.62 | 219.47 | 199.90 | 37.99 | 118.91 | 133.20 |
| 95th-Percentile Queue Length [veh/ln] | 8.80   | 6.80   | 6.63   | 25.85  | 28.49  | 28.49  | 2.28  | 13.64  | 12.63  | 2.74  | 8.33   | 9.11   |
| 95th-Percentile Queue Length [ft/ln]  | 220.06 | 169.97 | 165.78 | 646.31 | 712.23 | 712.23 | 56.91 | 340.95 | 315.83 | 68.39 | 208.33 | 227.84 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 62.17 | 38.92 | 38.87 | 90.22 | 51.55 | 51.55 | 58.01 | 33.57 | 32.96 | 65.56 | 29.66 | 11.79 |
| Movement LOS                    | E     | D     | D     | F     | D     | D     | E     | C     | C     | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 46.91 |       |       | 67.54 |       |       | 36.05 |       |       | 23.26 |       |       |
| Approach LOS                    | D     |       |       | E     |       |       | D     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 50.72 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.742 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 49.52 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.633 | 2.952 | 2.739 | 2.852 |
| Crosswalk LOS  | B     | C     | B     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 567   | 633   | 583   | 583   |
| d_b, Bicycle Delay [s]                                   | 30.83 | 28.03 | 30.12 | 30.12 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.934 | 3.395 | 2.197 | 2.291 |
| Bicycle LOS  | A     | C     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 31.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.768 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | No               |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Base Volume Input [veh/h]                   | 280        | 250    | 160    | 968        | 615    | 38     | 46               | 1403   | 277    | 294              | 1644   | 619    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 280        | 250    | 160    | 968        | 615    | 38     | 46               | 1403   | 277    | 294              | 1644   | 619    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 70         | 63     | 40     | 242        | 154    | 10     | 12               | 351    | 69     | 74               | 411    | 155    |
| Total Analysis Volume [veh/h]               | 280        | 250    | 160    | 968        | 615    | 38     | 46               | 1403   | 277    | 294              | 1644   | 619    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0                |        |        | 0                |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         | 4,6     |
| Lead / Lag                   | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6     | 6     | 0     | 6     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30    | 30    | 0     | 6     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0   | 1.0   | 0.0   | 1.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 10    | 48    | 0     | 10    | 48    | 0     | 10       | 45      | 0       | 12       | 47      | 47      |
| Vehicle Extension [s]        | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 0     | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 36    | 0     | 0        | 34      | 0       | 0        | 26      | 26      |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L      | C     | R     | L     | C     | C     | R     | L     | C     | C     | L     | C     | R    |
|---|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     | 105    | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105  |
| L, Total Lost Time per Cycle [s]        | 4.00   | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00   | 0.00  | 0.00  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00   | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 |
| g_i, Effective Green Time [s]           | 33     | 33    | 33    | 33    | 33    | 33    | 33    | 4     | 52    | 52    | 8     | 55    | 93   |
| g / C, Green / Cycle                    | 0.32   | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.32  | 0.04  | 0.49  | 0.49  | 0.08  | 0.53  | 0.88 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08   | 0.07  | 0.08  | 0.19  | 0.22  | 0.27  | 0.02  | 0.03  | 0.30  | 0.29  | 0.08  | 0.29  | 0.33 |
| s, saturation flow rate [veh/h]         | 3500   | 3800  | 1900  | 3500  | 1750  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500  | 5700  | 1900 |
| c, Capacity [veh/h]                     | 227    | 1201  | 601   | 942   | 613   | 601   | 601   | 76    | 1874  | 937   | 267   | 3005  | 1675 |
| d1, Uniform Delay [s]                   | 26.25  | 26.28 | 26.81 | 30.47 | 31.63 | 33.60 | 25.05 | 49.40 | 19.21 | 18.94 | 48.49 | 16.49 | 1.10 |
| k, delay calibration                    | 0.11   | 0.11  | 0.11  | 0.11  | 0.12  | 0.20  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.30 |
| l, Upstream Filtering Factor            | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               | 114.43 | 0.09  | 0.23  | 1.06  | 1.20  | 6.23  | 0.04  | 7.40  | 1.45  | 2.66  | 57.33 | 0.72  | 0.38 |
| d3, Initial Queue Delay [s]             | 0.00   | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  | 1.00   | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |        |        |        |       |       |       |       |       |        |        |        |        |       |
|---------------------------------------|--------|--------|--------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|
| X, volume / capacity                  | 1.24   | 0.21   | 0.27   | 0.72  | 0.64  | 0.85  | 0.06  | 0.60  | 0.60   | 0.58   | 1.10   | 0.55   | 0.37  |
| d, Delay for Lane Group [s/veh]       | 140.68 | 26.37  | 27.05  | 31.53 | 32.84 | 39.83 | 25.10 | 56.80 | 20.66  | 21.60  | 105.82 | 17.22  | 1.47  |
| Lane Group LOS                        | F      | C      | C      | C     | C     | D     | C     | E     | C      | C      | F      | B      | A     |
| Critical Lane Group                   | No     | No     | No     | No    | No    | Yes   | No    | No    | Yes    | No     | Yes    | No     | No    |
| 50th-Percentile Queue Length [veh/ln] | 5.67   | 2.30   | 3.02   | 7.34  | 8.82  | 12.99 | 0.67  | 1.34  | 9.96   | 9.83   | 5.61   | 8.59   | 0.70  |
| 50th-Percentile Queue Length [ft/ln]  | 141.73 | 57.46  | 75.55  | 183.4 | 220.5 | 324.7 | 16.73 | 33.49 | 249.11 | 245.85 | 140.29 | 214.74 | 17.52 |
| 95th-Percentile Queue Length [veh/ln] | 10.20  | 4.14   | 5.44   | 11.78 | 13.69 | 18.90 | 1.20  | 2.41  | 15.14  | 14.98  | 9.79   | 13.40  | 1.26  |
| 95th-Percentile Queue Length [ft/ln]  | 255.11 | 103.43 | 135.99 | 294.5 | 342.2 | 472.5 | 30.12 | 60.27 | 378.54 | 374.42 | 244.73 | 334.91 | 31.53 |

**Movement, Approach, & Intersection Results**

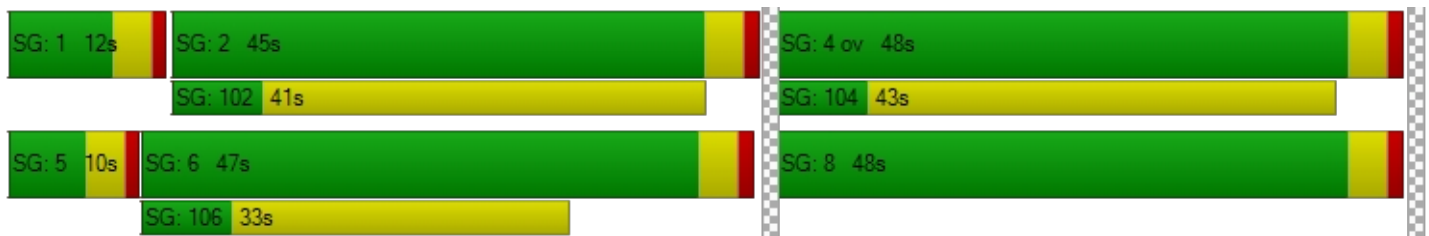
|                                 |        |       |       |       |       |       |       |       |       |        |       |      |
|---------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|------|
| d_M, Delay for Movement [s/veh] | 140.68 | 26.37 | 27.05 | 31.80 | 38.66 | 25.10 | 56.80 | 20.84 | 21.60 | 105.82 | 17.22 | 1.47 |
| Movement LOS                    | F      | C     | C     | C     | D     | C     | E     | C     | C     | F      | B     | A    |
| d_A, Approach Delay [s/veh]     | 72.91  |       |       | 34.32 |       |       | 21.92 |       |       | 23.59  |       |      |
| Approach LOS                    | E      |       |       | C     |       |       | C     |       |       | C      |       |      |
| d_I, Intersection Delay [s/veh] | 30.95  |       |       |       |       |       |       |       |       |        |       |      |
| Intersection LOS                | C      |       |       |       |       |       |       |       |       |        |       |      |
| Intersection V/C                | 0.768  |       |       |       |       |       |       |       |       |        |       |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 42.08 | 42.08 | 42.08 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.862 | 2.954 | 3.513 | 0.000 |
| Crosswalk LOS  | C     | C     | D     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 838   | 838   | 781   | 819   |
| d_b, Bicycle Delay [s]                                   | 17.72 | 17.72 | 19.50 | 18.30 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.129 | 2.897 | 2.509 | 2.966 |
| Bicycle LOS  | B     | C     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report**

**Intersection 8: Valencia Avenue at Lambert Road/Carbon Canyon Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.559 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound          |        |        |
| Lane Configuration           |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left               | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00              | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1      | 1               | 0      | 0      | 1            | 0      | 1      | 1                  | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00             | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00               | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00              |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00               |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No                 |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | No           |        |        | Yes                |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Lambert Road |        |        | Carbon Canyon Road |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|--------------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |                    |        |        |
| Base Volume Input [veh/h]                   | 422             | 162    | 873    | 27              | 124    | 38     | 33           | 957    | 598    | 198                | 369    | 9      |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00               | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 422             | 162    | 873    | 27              | 124    | 38     | 33           | 957    | 598    | 198                | 369    | 9      |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 0.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000             | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 106             | 41     | 0      | 7               | 31     | 10     | 8            | 239    | 150    | 50                 | 92     | 2      |
| Total Analysis Volume [veh/h]               | 422             | 162    | 0      | 27              | 124    | 38     | 33           | 957    | 598    | 198                | 369    | 9      |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No                 |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0                  | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0                  |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 2       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         | 2,8     |          |         |         |
| Lead / Lag                   | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6     | 6     | 0     | 6     | 6     | 0     | 6        | 6       | 6       | 6        | 6       | 0       |
| Maximum Green [s]            | 6     | 30    | 0     | 30    | 30    | 0     | 30       | 30      | 30      | 30       | 30      | 0       |
| Amber [s]                    | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 1.0   | 1.0   | 0.0   | 1.0   | 1.0   | 0.0   | 1.0      | 1.0     | 1.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 10    | 42    | 0     | 10    | 11    | 0     | 10       | 36      | 36      | 21       | 47      | 0       |
| Vehicle Extension [s]        | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 3.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 7     | 0     | 0     | 0     | 0     | 0        | 7       | 7       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 31    | 0     | 0     | 0     | 0     | 0        | 25      | 25      | 0        | 26      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 2.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      | No      | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R    | L     | C     | C     | L     | C     | R    | L     | C    | C    |
|---|-------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|------|------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110  | 110   | 110   | 110   | 110   | 110   | 110  | 110   | 110  | 110  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 18    | 18    | 18    | 18   | 7     | 7     | 7     | 4     | 61    | 94   | 8     | 65   | 65   |
| g / C, Green / Cycle                    | 0.16  | 0.16  | 0.16  | 0.16 | 0.06  | 0.06  | 0.06  | 0.04  | 0.55  | 0.85 | 0.08  | 0.59 | 0.59 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12  | 0.12  | 0.09  | 0.00 | 0.02  | 0.04  | 0.04  | 0.02  | 0.17  | 0.31 | 0.06  | 0.07 | 0.07 |
| s, saturation flow rate [veh/h]         | 1750  | 1750  | 1900  | 1900 | 1800  | 1900  | 1900  | 1800  | 5700  | 1900 | 3500  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 287   | 287   | 312   | 312  | 111   | 117   | 117   | 64    | 3146  | 1615 | 270   | 2255 | 1127 |
| d1, Uniform Delay [s]                   | 43.72 | 43.72 | 42.04 | 0.00 | 49.24 | 50.69 | 50.63 | 52.15 | 13.29 | 1.80 | 49.69 | 9.74 | 9.77 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11 | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.63  | 3.63  | 1.34  | 0.00 | 1.13  | 7.52  | 6.89  | 6.23  | 0.25  | 0.65 | 3.83  | 0.10 | 0.21 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |      |       |        |        |       |        |       |        |       |       |
|---------------------------------------|-------|-------|-------|------|-------|--------|--------|-------|--------|-------|--------|-------|-------|
| X, volume / capacity                  | 0.73  | 0.73  | 0.52  | 0.00 | 0.24  | 0.70   | 0.68   | 0.51  | 0.30   | 0.37  | 0.73   | 0.11  | 0.11  |
| d, Delay for Lane Group [s/veh]       | 47.35 | 47.35 | 43.37 | 0.00 | 50.37 | 58.21  | 57.52  | 58.38 | 13.54  | 2.46  | 53.52  | 9.84  | 9.98  |
| Lane Group LOS                        | D     | D     | D     | A    | D     | E      | E      | E     | B      | A     | D      | A     | A     |
| Critical Lane Group                   | Yes   | No    | No    | No   | No    | Yes    | No     | No    | No     | Yes   | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 5.73  | 5.73  | 4.13  | 0.00 | 0.74  | 2.46   | 2.37   | 1.01  | 4.21   | 1.76  | 2.80   | 1.30  | 1.39  |
| 50th-Percentile Queue Length [ft/ln]  | 143.2 | 143.2 | 103.2 | 0.00 | 18.56 | 61.54  | 59.37  | 25.14 | 105.21 | 44.12 | 70.06  | 32.40 | 34.68 |
| 95th-Percentile Queue Length [veh/ln] | 9.65  | 9.65  | 7.44  | 0.00 | 1.34  | 4.43   | 4.27   | 1.81  | 7.57   | 3.18  | 5.04   | 2.33  | 2.50  |
| 95th-Percentile Queue Length [ft/ln]  | 241.3 | 241.3 | 185.8 | 0.00 | 33.42 | 110.77 | 106.87 | 45.25 | 189.32 | 79.42 | 126.11 | 58.31 | 62.42 |

**Movement, Approach, & Intersection Results**

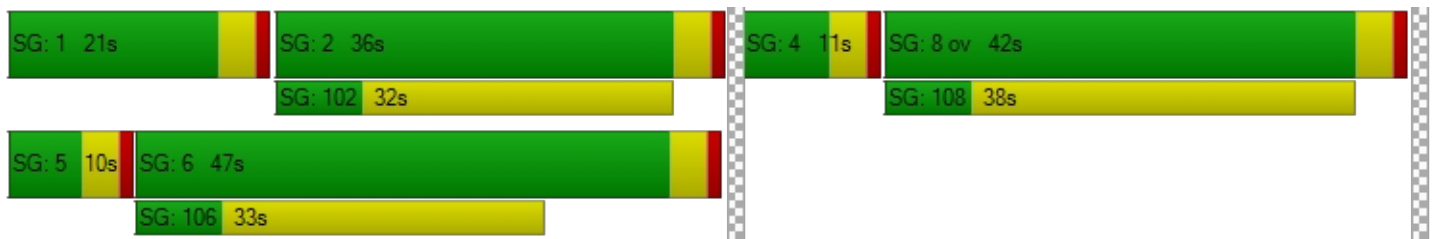
|                                 |       |       |      |       |       |       |       |       |      |       |      |      |
|---------------------------------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 47.35 | 43.37 | 0.00 | 50.37 | 57.98 | 57.52 | 58.38 | 13.54 | 2.46 | 53.52 | 9.88 | 9.98 |
| Movement LOS                    | D     | D     | A    | D     | E     | E     | E     | B     | A    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 46.25 |       |      | 56.80 |       |       | 10.30 |       |      | 24.88 |      |      |
| Approach LOS                    | D     |       |      | E     |       |       | B     |       |      | C     |      |      |
| d_I, Intersection Delay [s/veh] | 23.30 |       |      |       |       |       |       |       |      |       |      |      |
| Intersection LOS                | C     |       |      |       |       |       |       |       |      |       |      |      |
| Intersection V/C                | 0.559 |       |      |       |       |       |       |       |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.58 | 44.58 | 0.00  | 44.58 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.813 | 2.386 | 0.000 | 2.925 |
| Crosswalk LOS  | C     | B     | F     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 691   | 127   | 582   | 781   |
| d_b, Bicycle Delay [s]                                   | 23.59 | 48.25 | 27.68 | 20.43 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.041 | 1.716 | 2.433 | 1.876 |
| Bicycle LOS  | B     | A     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**

**Intersection 14: Valencia Avenue at Birch Street/Rose Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 38.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | D     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.947 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound    |        |        | Westbound  |        |        |
| Lane Configuration           | T T T           |        |        | T T T           |        |        | T T T        |        |        | T T T      |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left         | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1            | 0      | 0      | 1          | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00        |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00         |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No           |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes          |        |        | Yes        |        |        |

**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Birch Street |        |        | Rose Drive |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|--------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |              |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 240             | 710    | 53     | 562             | 308    | 64     | 229          | 735    | 165    | 34         | 565    | 917    |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 240             | 710    | 53     | 562             | 308    | 64     | 229          | 735    | 165    | 34         | 565    | 917    |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 60              | 178    | 13     | 141             | 77     | 16     | 57           | 184    | 41     | 9          | 141    | 229    |
| Total Analysis Volume [veh/h]               | 240             | 710    | 53     | 562             | 308    | 64     | 229          | 735    | 165    | 34         | 565    | 917    |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No           |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0            | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0            |        |        | 0          |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 115                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|----------|---------|---------|----------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3        | 8       | 0       | 7        | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |          |         |         |          |         | 6,7     |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 27       | 38      | 0       | 25       | 36      | 0       | 13       | 36      | 0       | 16       | 39      | 39      |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0        | 27      | 0       | 0        | 25      | 0       | 0        | 25      | 0       | 0        | 28      | 28      |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Maximum Recall               | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            | No       | No      |         | No       | No      |         | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | L     | C     | C     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   | 115   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  |
| g_i, Effective Green Time [s]           | 17    | 26    | 26    | 21    | 30    | 30    | 9     | 48    | 48    | 4     | 43    | 68    |
| g / C, Green / Cycle                    | 0.15  | 0.23  | 0.23  | 0.18  | 0.26  | 0.26  | 0.08  | 0.42  | 0.42  | 0.04  | 0.37  | 0.59  |
| (v / s)_i Volume / Saturation Flow Rate | 0.13  | 0.20  | 0.20  | 0.16  | 0.10  | 0.09  | 0.07  | 0.24  | 0.23  | 0.02  | 0.15  | 0.48  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 3500  | 1900  | 1900  | 3500  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 272   | 432   | 432   | 640   | 493   | 493   | 276   | 789   | 789   | 64    | 1413  | 1120  |
| d1, Uniform Delay [s]                   | 47.86 | 43.10 | 42.83 | 45.78 | 35.11 | 34.88 | 52.24 | 26.04 | 25.54 | 54.56 | 26.68 | 18.76 |
| k, delay calibration                    | 0.11  | 0.23  | 0.21  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.20  | 12.53 | 10.28 | 4.09  | 0.50  | 0.46  | 6.31  | 3.21  | 2.78  | 6.70  | 0.85  | 6.72  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |        |        |        |        |        |        |        |        |        |       |        |        |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|
| X, volume / capacity                  | 0.88   | 0.89   | 0.87   | 0.88   | 0.39   | 0.37   | 0.83   | 0.59   | 0.55   | 0.53  | 0.40   | 0.82   |
| d, Delay for Lane Group [s/veh]       | 57.06  | 55.62  | 53.12  | 49.87  | 35.61  | 35.33  | 58.55  | 29.25  | 28.32  | 61.25 | 27.52  | 25.48  |
| Lane Group LOS                        | E      | E      | D      | D      | D      | D      | E      | C      | C      | E     | C      | C      |
| Critical Lane Group                   | No     | Yes    | No     | Yes    | No     | No     | Yes    | No     | No     | No    | No     | Yes    |
| 50th-Percentile Queue Length [veh/ln] | 7.41   | 12.07  | 11.49  | 8.14   | 4.50   | 4.20   | 3.50   | 10.40  | 9.53   | 1.09  | 5.87   | 20.21  |
| 50th-Percentile Queue Length [ft/ln]  | 185.28 | 301.84 | 287.13 | 203.52 | 112.47 | 105.11 | 87.40  | 259.94 | 238.37 | 27.19 | 146.63 | 505.34 |
| 95th-Percentile Queue Length [veh/ln] | 11.88  | 17.77  | 17.04  | 12.82  | 7.98   | 7.57   | 6.29   | 15.69  | 14.60  | 1.96  | 9.84   | 27.59  |
| 95th-Percentile Queue Length [ft/ln]  | 296.90 | 444.30 | 426.08 | 320.50 | 199.43 | 189.18 | 157.33 | 392.15 | 364.97 | 48.94 | 245.93 | 689.67 |

**Movement, Approach, & Intersection Results**

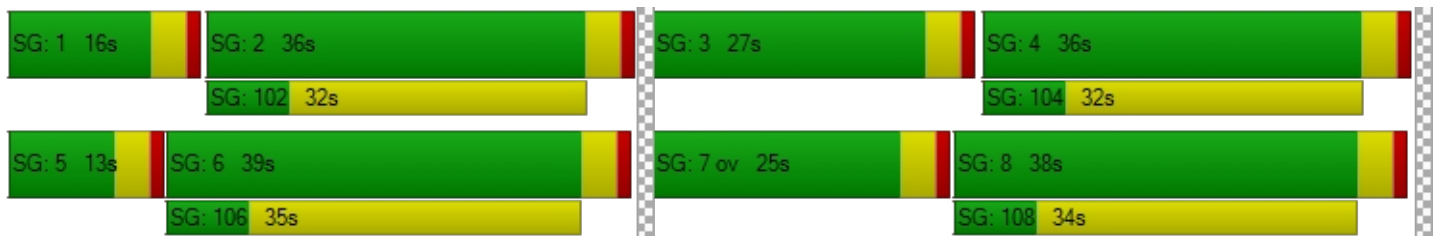
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 57.06 | 54.48 | 53.12 | 49.87 | 35.51 | 35.33 | 58.55 | 28.91 | 28.32 | 61.25 | 27.52 | 25.48 |
| Movement LOS                    | E     | D     | D     | D     | D     | D     | E     | C     | C     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 55.02 |       |       | 44.14 |       |       | 34.83 |       |       | 27.04 |       |       |
| Approach LOS                    | E     |       |       | D     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 38.57 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | D     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.947 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 47.05 | 47.05 | 47.05 | 47.05 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.606 | 2.918 | 2.789 | 2.930 |
| Crosswalk LOS  | B     | C     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 591   | 556   | 556   | 608   |
| d_b, Bicycle Delay [s]                                   | 28.54 | 29.97 | 29.97 | 27.84 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.387 | 2.330 | 2.491 | 2.810 |
| Bicycle LOS  | B     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | 7 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 22: Rose Drive at Imperial Highway**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 29.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.883 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound        |        |        | Westbound        |        |        |
| Lane Configuration           | [Diagram]  |        |        | [Diagram]  |        |        | [Diagram]        |        |        | [Diagram]        |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left             | Thru   | Right  | Left             | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  | 12.00            | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 1      | 1          | 0      | 1      | 1                | 0      | 1      | 1                | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 | 100.00           | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   | 0.00             | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00            |        |        | 30.00            |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00             |        |        | 0.00             |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No               |        |        | No               |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes              |        |        | No               |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Imperial Highway |        |        | Imperial Highway |        |        |
|---|------------|--------|--------|------------|--------|--------|------------------|--------|--------|------------------|--------|--------|
|   |            |        |        |            |        |        |                  |        |        |                  |        |        |
| Base Volume Input [veh/h]                   | 306        | 657    | 143    | 1040       | 549    | 33     | 91               | 2005   | 315    | 176              | 1570   | 896    |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   | 2.00             | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 306        | 657    | 143    | 1040       | 549    | 33     | 91               | 2005   | 315    | 176              | 1570   | 896    |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 | 1.0000           | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 77         | 164    | 36     | 260        | 137    | 8      | 23               | 501    | 79     | 44               | 393    | 224    |
| Total Analysis Volume [veh/h]               | 306        | 657    | 143    | 1040       | 549    | 33     | 91               | 2005   | 315    | 176              | 1570   | 896    |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No               |        | No     | No               |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0                | 0      | 0      | 0                | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_di, Inbound Pedestrian Volume crossing in |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_co, Outbound Pedestrian Volume crossing   |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ci, Inbound Pedestrian Volume crossing mi |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| v_ab, Corner Pedestrian Volume [ped/h]      |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |
| Bicycle Volume [bicycles/h]                 |            | 0      |        |            | 0      |        |                  | 0      |        |                  | 0      |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 105                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap |
|------------------------------|-------|-------|-------|-------|-------|-------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 3     | 8     | 0     | 7     | 4     | 0     | 5        | 2       | 0       | 1        | 6       | 6       |
| Auxiliary Signal Groups      |       |       |       |       |       |       |          |         |         |          |         | 4,6     |
| Lead / Lag                   | Lead  | -     | -     | Lead  | -     | -     | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 6     | 6     | 0     | 6     | 6     | 0     | 6        | 6       | 0       | 6        | 6       | 6       |
| Maximum Green [s]            | 30    | 30    | 0     | 6     | 30    | 0     | 30       | 30      | 0       | 30       | 30      | 30      |
| Amber [s]                    | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| All red [s]                  | 1.0   | 1.0   | 0.0   | 1.0   | 1.0   | 0.0   | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 1.0     |
| Split [s]                    | 10    | 50    | 0     | 10    | 50    | 0     | 10       | 45      | 0       | 10       | 45      | 45      |
| Vehicle Extension [s]        | 3.0   | 3.0   | 0.0   | 3.0   | 3.0   | 0.0   | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 3.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 0     | 0        | 7       | 0       | 0        | 7       | 7       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 36    | 0     | 0        | 34      | 0       | 0        | 26      | 26      |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |       |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| I2, Clearance Lost Time [s]  | 2.0   | 2.0   | 0.0   | 2.0   | 2.0   | 0.0   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 2.0     |
| Minimum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Maximum Recall               |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Pedestrian Recall            |       | No    |       |       | No    |       | No       | No      |         | No       | No      | No      |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | C     | R     | L     | C     | C     | L     | C     | R    |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| C, Cycle Length [s]                     | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105   | 105  |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 2.00  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00 |
| g_i, Effective Green Time [s]           | 36    | 36    | 36    | 36    | 36    | 36    | 36    | 6     | 51    | 51    | 6     | 51    | 91   |
| g / C, Green / Cycle                    | 0.34  | 0.34  | 0.34  | 0.34  | 0.34  | 0.34  | 0.34  | 0.06  | 0.48  | 0.48  | 0.06  | 0.48  | 0.87 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09  | 0.17  | 0.08  | 0.20  | 0.20  | 0.29  | 0.02  | 0.05  | 0.41  | 0.41  | 0.05  | 0.28  | 0.47 |
| s, saturation flow rate [veh/h]         | 3500  | 3800  | 1900  | 3500  | 1750  | 1900  | 1900  | 1800  | 3800  | 1900  | 3500  | 5700  | 1900 |
| c, Capacity [veh/h]                     | 270   | 1305  | 652   | 722   | 669   | 652   | 652   | 106   | 1837  | 918   | 206   | 2755  | 1643 |
| d1, Uniform Delay [s]                   | 24.53 | 27.36 | 24.48 | 28.22 | 28.22 | 31.83 | 23.03 | 48.96 | 23.57 | 23.72 | 48.94 | 19.33 | 1.81 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.21  | 0.11  | 0.11  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| d2, Incremental Delay [s]               | 70.22 | 0.30  | 0.17  | 8.80  | 0.62  | 5.74  | 0.03  | 17.38 | 4.80  | 9.53  | 9.57  | 0.86  | 1.31 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 |

**Lane Group Results**

|                                       |        |        |        |       |       |       |       |        |        |        |        |        |        |
|---------------------------------------|--------|--------|--------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| X, volume / capacity                  | 1.13   | 0.50   | 0.22   | 0.96  | 0.52  | 0.84  | 0.05  | 0.86   | 0.84   | 0.85   | 0.85   | 0.57   | 0.55   |
| d, Delay for Lane Group [s/veh]       | 94.75  | 27.67  | 24.64  | 37.02 | 28.85 | 37.57 | 23.06 | 66.34  | 28.38  | 33.25  | 58.51  | 20.19  | 3.12   |
| Lane Group LOS                        | F      | C      | C      | D     | C     | D     | C     | E      | C      | C      | E      | C      | A      |
| Critical Lane Group                   | No     | No     | No     | No    | No    | Yes   | No    | No     | No     | Yes    | Yes    | No     | No     |
| 50th-Percentile Queue Length [veh/ln] | 5.01   | 6.51   | 2.55   | 7.91  | 7.15  | 13.60 | 0.55  | 2.87   | 17.00  | 18.45  | 2.55   | 9.00   | 2.34   |
| 50th-Percentile Queue Length [ft/ln]  | 125.37 | 162.85 | 63.63  | 197.8 | 178.6 | 339.9 | 13.80 | 71.72  | 425.04 | 461.17 | 63.81  | 225.02 | 58.59  |
| 95th-Percentile Queue Length [veh/ln] | 9.03   | 10.70  | 4.58   | 12.53 | 11.53 | 19.64 | 0.99  | 5.16   | 23.76  | 25.49  | 4.59   | 13.92  | 4.22   |
| 95th-Percentile Queue Length [ft/ln]  | 225.67 | 267.49 | 114.54 | 313.1 | 288.2 | 491.0 | 24.84 | 129.09 | 594.09 | 637.26 | 114.85 | 348.03 | 105.46 |

**Movement, Approach, & Intersection Results**

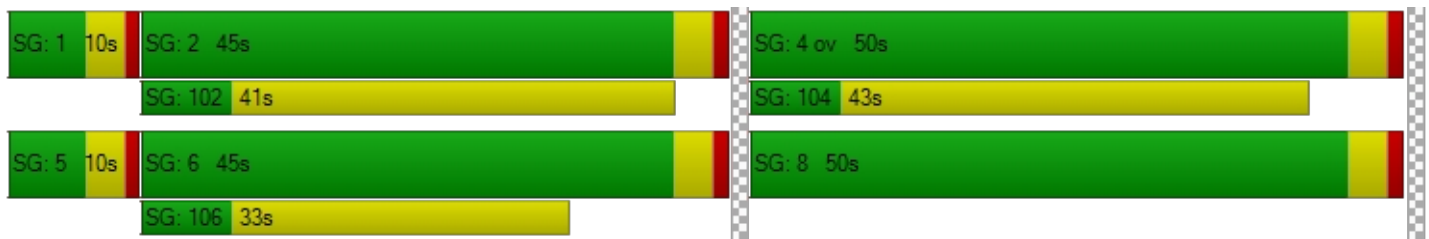
|                                 |       |       |       |       |       |       |       |       |       |       |       |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| d_M, Delay for Movement [s/veh] | 94.75 | 27.67 | 24.64 | 34.30 | 37.57 | 23.06 | 66.34 | 29.50 | 33.25 | 58.51 | 20.19 | 3.12 |
| Movement LOS                    | F     | C     | C     | C     | D     | C     | E     | C     | C     | E     | C     | A    |
| d_A, Approach Delay [s/veh]     | 45.84 |       |       | 35.18 |       |       | 31.38 |       |       | 16.96 |       |      |
| Approach LOS                    | D     |       |       | D     |       |       | C     |       |       | B     |       |      |
| d_I, Intersection Delay [s/veh] | 29.33 |       |       |       |       |       |       |       |       |       |       |      |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |      |
| Intersection V/C                | 0.883 |       |       |       |       |       |       |       |       |       |       |      |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 0.0   |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 42.07 |  |  | 42.07 |  |  | 42.07 |  |  | 0.00  |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.900 |  |  | 3.056 |  |  | 3.638 |  |  | 0.000 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | D     |  |  | F     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 876   |  |  | 876   |  |  | 781   |  |  | 781   |  |  |
| d_b, Bicycle Delay [s]                                   | 16.57 |  |  | 16.57 |  |  | 19.50 |  |  | 19.50 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.472 |  |  | 2.898 |  |  | 2.886 |  |  | 3.013 |  |  |
| Bicycle LOS  | B     |  |  | C     |  |  | C     |  |  | C     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**APPENDIX E**  
**YEAR 2045 MODELING WORKSHEETS**



**1. State College Boulevard at Lambert Road**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT        | APPROACH                        | FY<br>TOTAL  |
|----------------|-----------------------|--------------------|---------------------------------|--------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 147<br>187<br>129  | NORTHBOUND<br>IN ...<br>OUT ... | 470<br>1299  |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 840<br>564<br>8    | SOUTHBOUND<br>IN ...<br>OUT ... | 1438<br>645  |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 13<br>1185<br>191  | EASTBOUND<br>IN ...<br>OUT ...  | 1580<br>1438 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 417<br>1476<br>519 | WESTBOUND<br>IN ...<br>OUT ...  | 2191<br>2297 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT         | FY<br>FORECAST      |
|----------------|-----------------------|---------------------|---------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 147<br>187<br>129   | 194<br>247<br>228   |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 840<br>564<br>8     | 1,011<br>688<br>9   |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 13<br>1,185<br>191  | 16<br>1,587<br>238  |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 417<br>1,476<br>519 | 534<br>2,025<br>627 |

**2. SR-57 SB Ramps at Lambert Road**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 0           | NORTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 0           |
|          | RIGHT            | 0           | OUT ...    | 662         |
| SOUTH    | LEFT             | 997         | SOUTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 1538        |
|          | RIGHT            | 498         | OUT ...    | 0           |
| EAST     | LEFT             | 0           | EASTBOUND  |             |
| BOUND    | THRU             | 1611        | IN ...     | 2303        |
|          | RIGHT            | 549         | OUT ...    | 2245        |
| WEST     | LEFT             | 211         | WESTBOUND  |             |
| BOUND    | THRU             | 1968        | IN ...     | 1959        |
|          | RIGHT            | 0           | OUT ...    | 2893        |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 0           | 0              |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 0           | 0              |
| SOUTH    | LEFT             | 997         | 1,075          |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 498         | 725            |
| EAST     | LEFT             | 0           | 0              |
| BOUND    | THRU             | 1,611       | 1,939          |
|          | RIGHT            | 549         | 650            |
| WEST     | LEFT             | 211         | 269            |
| BOUND    | THRU             | 1,968       | 2,274          |
|          | RIGHT            | 0           | 0              |

**3. SR-57 NB Ramps at Lambert Road  
AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH             | FY<br>TOTAL |
|----------------|------------------|-------------|----------------------|-------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 989<br>0    | NORTHBOUND<br>IN ... | 1,423       |
|                | RIGHT            | 468         | OUT ...              | 0           |
| SOUTH<br>BOUND | LEFT<br>THRU     | 0<br>0      | SOUTHBOUND<br>IN ... | 0           |
|                | RIGHT            | 0           | OUT ...              | 764         |
| EAST<br>BOUND  | LEFT<br>THRU     | 267<br>2331 | EASTBOUND<br>IN ...  | 2,883       |
|                | RIGHT            | 0           | OUT ...              | 1,970       |
| WEST<br>BOUND  | LEFT<br>THRU     | 0<br>1201   | WESTBOUND<br>IN ...  | 1,516       |
|                | RIGHT            | 461         | OUT ...              | 3,086       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT  | FY<br>FORECAST |
|----------------|------------------|--------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 989<br>0     | 1,104<br>0     |
|                | RIGHT            | 468          | 531            |
| SOUTH<br>BOUND | LEFT<br>THRU     | 0<br>0       | 0<br>0         |
|                | RIGHT            | 0            | 0              |
| EAST<br>BOUND  | LEFT<br>THRU     | 267<br>2,331 | 419<br>2,586   |
|                | RIGHT            | 0            | 0              |
| WEST<br>BOUND  | LEFT<br>THRU     | 0<br>1,201   | 0<br>1,452     |
|                | RIGHT            | 461          | 511            |

**4. Pointe Drive at Lambert Road**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL    |
|----------------|-----------------------|-------------------|---------------------------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 8<br>7<br>6       | NORTHBOUND<br>IN ...<br>OUT ... | 21<br>51       |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 42<br>1<br>85     | SOUTHBOUND<br>IN ...<br>OUT ... | 128<br>611     |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 459<br>2114<br>35 | EASTBOUND<br>IN ...<br>OUT ...  | 2,895<br>1,525 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 15<br>1578<br>145 | WESTBOUND<br>IN ...<br>OUT ...  | 1,592<br>2,449 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT        | FY<br>FORECAST     |
|----------------|-----------------------|--------------------|--------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 8<br>7<br>6        | 9<br>8<br>7        |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 42<br>1<br>85      | 69<br>1<br>137     |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 459<br>2,114<br>35 | 585<br>2,590<br>42 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 15<br>1,578<br>145 | 18<br>1,999<br>192 |

**5. Wildcat Way/N Associated Road at Lambert Road**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT        | APPROACH                        | FY<br>TOTAL    |
|----------------|-----------------------|--------------------|---------------------------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 137<br>268<br>10   | NORTHBOUND<br>IN ...<br>OUT ... | 415<br>348     |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 104<br>182<br>339  | SOUTHBOUND<br>IN ...<br>OUT ... | 625<br>838     |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 417<br>1659<br>140 | EASTBOUND<br>IN ...<br>OUT ...  | 2,516<br>1,498 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 19<br>1195<br>153  | WESTBOUND<br>IN ...<br>OUT ...  | 1,194<br>2,066 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT         | FY<br>FORECAST      |
|----------------|-----------------------|---------------------|---------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 137<br>268<br>10    | 169<br>322<br>11    |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 104<br>182<br>339   | 125<br>218<br>405   |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 417<br>1,659<br>140 | 499<br>2,059<br>173 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 19<br>1,195<br>153  | 23<br>1,554<br>183  |

**6. Santa Fe Road/Kraemer Boulevard at Lambert Road**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL    |
|----------------|-----------------------|-------------------|---------------------------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 277<br>107<br>30  | NORTHBOUND<br>IN ...<br>OUT ... | 283<br>1,782   |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 18<br>204<br>308  | SOUTHBOUND<br>IN ...<br>OUT ... | 530<br>211     |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 92<br>614<br>1008 | EASTBOUND<br>IN ...<br>OUT ...  | 2,014<br>1,094 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 253<br>691<br>12  | WESTBOUND<br>IN ...<br>OUT ...  | 960<br>700     |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT        | FY<br>FORECAST      |
|----------------|-----------------------|--------------------|---------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 277<br>107<br>30   | 332<br>130<br>40    |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 18<br>204<br>308   | 22<br>236<br>373    |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 92<br>614<br>1,008 | 111<br>803<br>1,243 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 253<br>691<br>12   | 303<br>946<br>14    |

**7. Sunflower Street at Lambert Road**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| NORTH    | LEFT             | 40          | NORTHBOUND |             |
| BOUND    | THRU             | 5           | IN ...     | 63          |
|          | RIGHT            | 16          | OUT ...    | 64          |
| SOUTH    | LEFT             | 4           | SOUTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 9           |
|          | RIGHT            | 5           | OUT ...    | 13          |
| EAST     | LEFT             | 6           | EASTBOUND  |             |
| BOUND    | THRU             | 654         | IN ...     | 741         |
|          | RIGHT            | 43          | OUT ...    | 981         |
| WEST     | LEFT             | 22          | WESTBOUND  |             |
| BOUND    | THRU             | 932         | IN ...     | 960         |
|          | RIGHT            | 2           | OUT ...    | 715         |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| NORTH    | LEFT             | 40          | 48             |
| BOUND    | THRU             | 5           | 6              |
|          | RIGHT            | 16          | 19             |
| SOUTH    | LEFT             | 4           | 5              |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 5           | 6              |
| EAST     | LEFT             | 6           | 7              |
| BOUND    | THRU             | 654         | 856            |
|          | RIGHT            | 43          | 51             |
| WEST     | LEFT             | 22          | 26             |
| BOUND    | THRU             | 932         | 1,236          |
|          | RIGHT            | 2           | 2              |

**8. Valencia Avenue at Lambert Road/Carbon Canyon Road**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL  |
|----------------|-----------------------|-------------------|---------------------------------|--------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 264<br>173<br>132 | NORTHBOUND<br>IN ...<br>OUT ... | 586<br>1,738 |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 7<br>352<br>38    | SOUTHBOUND<br>IN ...<br>OUT ... | 397<br>219   |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 44<br>148<br>488  | EASTBOUND<br>IN ...<br>OUT ...  | 721<br>964   |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 862<br>658<br>2   | WESTBOUND<br>IN ...<br>OUT ...  | 1,562<br>346 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | FY<br>FORECAST    |
|----------------|-----------------------|-------------------|-------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 264<br>173<br>132 | 316<br>208<br>174 |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 7<br>352<br>38    | 8<br>422<br>48    |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 44<br>148<br>488  | 56<br>248<br>584  |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 862<br>658<br>2   | 1,067<br>906<br>2 |



**9. Santa Fe Road at Carbon Canyon Road**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 4           | NORTHBOUND |             |
| BOUND    | THRU             | 1           | IN ...     | 6           |
|          | RIGHT            | 1           | OUT ...    | 13          |
| SOUTH    | LEFT             | 0           | SOUTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 29          |
|          | RIGHT            | 22          | OUT ...    | 29          |
| EAST     | LEFT             | 13          | EASTBOUND  |             |
| BOUND    | THRU             | 294         | IN ...     | 373         |
|          | RIGHT            | 7           | OUT ...    | 1608        |
| WEST     | LEFT             | 6           | WESTBOUND  |             |
| BOUND    | THRU             | 1542        | IN ...     | 1587        |
|          | RIGHT            | 4           | OUT ...    | 345         |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 4           | 5              |
| BOUND    | THRU             | 1           | 1              |
|          | RIGHT            | 1           | 1              |
|          | RIGHT            | 1           | 1              |
| SOUTH    | LEFT             | 0           | 0              |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 22          | 29             |
|          | RIGHT            | 22          | 29             |
| EAST     | LEFT             | 13          | 22             |
| BOUND    | THRU             | 294         | 428            |
|          | RIGHT            | 7           | 8              |
|          | RIGHT            | 7           | 8              |
| WEST     | LEFT             | 6           | 7              |
| BOUND    | THRU             | 1,542       | 1,990          |
|          | RIGHT            | 4           | 6              |

**10. State College Boulevard at Birch Street**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 73          | NORTHBOUND |             |
| BOUND    | THRU             | 115         | IN ...     | 277         |
|          | RIGHT            | 93          | OUT ...    | 1068        |
| SOUTH    | LEFT             | 610         | SOUTHBOUND |             |
| BOUND    | THRU             | 755         | IN ...     | 1624        |
|          | RIGHT            | 141         | OUT ...    | 448         |
| EAST     | LEFT             | 72          | EASTBOUND  |             |
| BOUND    | THRU             | 487         | IN ...     | 723         |
|          | RIGHT            | 46          | OUT ...    | 825         |
| WEST     | LEFT             | 74          | WESTBOUND  |             |
| BOUND    | THRU             | 540         | IN ...     | 966         |
|          | RIGHT            | 265         | OUT ...    | 1250        |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 73          | 88             |
| BOUND    | THRU             | 115         | 166            |
|          | RIGHT            | 93          | 111            |
| SOUTH    | LEFT             | 610         | 776            |
| BOUND    | THRU             | 755         | 964            |
|          | RIGHT            | 141         | 254            |
| EAST     | LEFT             | 72          | 125            |
| BOUND    | THRU             | 487         | 576            |
|          | RIGHT            | 46          | 68             |
| WEST     | LEFT             | 74          | 98             |
| BOUND    | THRU             | 540         | 660            |
|          | RIGHT            | 265         | 338            |

**11. S Associated Road at Birch Street**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| NORTH    | LEFT             | 228         | NORTHBOUND |             |
| BOUND    | THRU             | 6           | IN ...     | 527         |
|          | RIGHT            | 298         | OUT ...    | 539         |
| SOUTH    | LEFT             | 53          | SOUTHBOUND |             |
| BOUND    | THRU             | 28          | IN ...     | 89          |
|          | RIGHT            | 8           | OUT ...    | 18          |
| EAST     | LEFT             | 2           | EASTBOUND  |             |
| BOUND    | THRU             | 883         | IN ...     | 1,178       |
|          | RIGHT            | 294         | OUT ...    | 1,030       |
| WEST     | LEFT             | 332         | WESTBOUND  |             |
| BOUND    | THRU             | 724         | IN ...     | 1,102       |
|          | RIGHT            | 10          | OUT ...    | 1,309       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| NORTH    | LEFT             | 228         | 286            |
| BOUND    | THRU             | 6           | 7              |
|          | RIGHT            | 298         | 361            |
| SOUTH    | LEFT             | 53          | 63             |
| BOUND    | THRU             | 28          | 34             |
|          | RIGHT            | 8           | 11             |
| EAST     | LEFT             | 2           | 5              |
| BOUND    | THRU             | 883         | 1,094          |
|          | RIGHT            | 294         | 374            |
| WEST     | LEFT             | 332         | 399            |
| BOUND    | THRU             | 724         | 887            |
|          | RIGHT            | 10          | 11             |

**12. N Associated Road at Birch Street**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 3           | NORTHBOUND |             |
| BOUND    | THRU             | 3           | IN ...     | 11          |
|          | RIGHT            | 5           | OUT ...    | 26          |
| SOUTH    | LEFT             | 152         | SOUTHBOUND |             |
| BOUND    | THRU             | 2           | IN ...     | 617         |
|          | RIGHT            | 437         | OUT ...    | 392         |
| EAST     | LEFT             | 309         | EASTBOUND  |             |
| BOUND    | THRU             | 810         | IN ...     | 1,210       |
|          | RIGHT            | 16          | OUT ...    | 1,172       |
| WEST     | LEFT             | 8           | WESTBOUND  |             |
| BOUND    | THRU             | 696         | IN ...     | 818         |
|          | RIGHT            | 78          | OUT ...    | 1,067       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 3           | 3              |
| BOUND    | THRU             | 3           | 3              |
|          | RIGHT            | 5           | 6              |
| SOUTH    | LEFT             | 152         | 187            |
| BOUND    | THRU             | 2           | 2              |
|          | RIGHT            | 437         | 524            |
| EAST     | LEFT             | 309         | 371            |
| BOUND    | THRU             | 810         | 1,010          |
|          | RIGHT            | 16          | 19             |
| WEST     | LEFT             | 8           | 9              |
| BOUND    | THRU             | 696         | 856            |
|          | RIGHT            | 78          | 99             |

**13. Kraemer Boulevard at Birch Street**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| NORTH    | LEFT             | 130         | NORTHBOUND |             |
| BOUND    | THRU             | 209         | IN ...     | 265         |
|          | RIGHT            | 89          | OUT ...    | 1,637       |
| SOUTH    | LEFT             | 427         | SOUTHBOUND |             |
| BOUND    | THRU             | 958         | IN ...     | 1,903       |
|          | RIGHT            | 171         | OUT ...    | 305         |
| EAST     | LEFT             | 36          | EASTBOUND  |             |
| BOUND    | THRU             | 533         | IN ...     | 1,012       |
|          | RIGHT            | 335         | OUT ...    | 749         |
| WEST     | LEFT             | 60          | WESTBOUND  |             |
| BOUND    | THRU             | 411         | IN ...     | 672         |
|          | RIGHT            | 209         | OUT ...    | 1,162       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| NORTH    | LEFT             | 130         | 155            |
| BOUND    | THRU             | 209         | 251            |
|          | RIGHT            | 89          | 106            |
|          | LEFT             | 427         | 507            |
| SOUTH    | THRU             | 958         | 1,184          |
|          | RIGHT            | 171         | 213            |
| EAST     | LEFT             | 36          | 48             |
| BOUND    | THRU             | 533         | 678            |
|          | RIGHT            | 335         | 388            |
| WEST     | LEFT             | 60          | 72             |
| BOUND    | THRU             | 411         | 517            |
|          | RIGHT            | 209         | 250            |

**14. Valencia Avenue at Birch Street/Rose Drive**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| NORTH    | LEFT             | 130         | NORTHBOUND |             |
| BOUND    | THRU             | 196         | IN ...     | 341         |
|          | RIGHT            | 13          | OUT ...    | 957         |
| SOUTH    | LEFT             | 718         | SOUTHBOUND |             |
| BOUND    | THRU             | 755         | IN ...     | 1,752       |
|          | RIGHT            | 243         | OUT ...    | 578         |
| EAST     | LEFT             | 60          | EASTBOUND  |             |
| BOUND    | THRU             | 418         | IN ...     | 668         |
|          | RIGHT            | 130         | OUT ...    | 715         |
| WEST     | LEFT             | 12          | WESTBOUND  |             |
| BOUND    | THRU             | 340         | IN ...     | 677         |
|          | RIGHT            | 305         | OUT ...    | 1,188       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| NORTH    | LEFT             | 130         | 155            |
| BOUND    | THRU             | 196         | 251            |
|          | RIGHT            | 13          | 16             |
| SOUTH    | LEFT             | 718         | 860            |
| BOUND    | THRU             | 755         | 939            |
|          | RIGHT            | 243         | 292            |
| EAST     | LEFT             | 60          | 72             |
| BOUND    | THRU             | 418         | 531            |
|          | RIGHT            | 130         | 149            |
| WEST     | LEFT             | 12          | 15             |
| BOUND    | THRU             | 340         | 422            |
|          | RIGHT            | 305         | 365            |

**15. Rose Drive at Vesuvius Drive**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH             | FY<br>TOTAL |
|----------------|------------------|-------------|----------------------|-------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 10<br>665   | NORTHBOUND<br>IN ... | 678         |
|                | RIGHT            | 0           | OUT ...              | 1,383       |
| SOUTH<br>BOUND | LEFT<br>THRU     | 0<br>1202   | SOUTHBOUND<br>IN ... | 1,251       |
|                | RIGHT            | 10          | OUT ...              | 693         |
| EAST<br>BOUND  | LEFT<br>THRU     | 8<br>0      | EASTBOUND<br>IN ...  | 268         |
|                | RIGHT            | 33          | OUT ...              | 121         |
| WEST<br>BOUND  | LEFT<br>THRU     | 0<br>0      | WESTBOUND<br>IN ...  | 0           |
|                | RIGHT            | 0           | OUT ...              | 0           |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------------|------------------|-------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 10<br>665   | 54<br>811      |
|                | RIGHT            | 0           | 0              |
| SOUTH<br>BOUND | LEFT<br>THRU     | 0<br>1,202  | 0<br>1,469     |
|                | RIGHT            | 10          | 67             |
| EAST<br>BOUND  | LEFT<br>THRU     | 8<br>0      | 61<br>0        |
|                | RIGHT            | 33          | 207            |
| WEST<br>BOUND  | LEFT<br>THRU     | 0<br>0      | 0<br>0         |
|                | RIGHT            | 0           | 0              |

**16. SR-57 SB Ramps at Imperial Highway**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 0           | NORTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 0           |
|          | RIGHT            | 0           | OUT ...    | 603         |
| SOUTH    | LEFT             | 558         | SOUTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 1,134       |
|          | RIGHT            | 445         | OUT ...    | 174         |
| EAST     | LEFT             | 0           | EASTBOUND  |             |
| BOUND    | THRU             | 1366        | IN ...     | 2,318       |
|          | RIGHT            | 619         | OUT ...    | 2,300       |
| WEST     | LEFT             | 0           | WESTBOUND  |             |
| BOUND    | THRU             | 1589        | IN ...     | 1,895       |
|          | RIGHT            | 174         | OUT ...    | 2,269       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 0           | 0              |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 0           | 0              |
| SOUTH    | LEFT             | 558         | 684            |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 445         | 562            |
| EAST     | LEFT             | 0           | 0              |
| BOUND    | THRU             | 1,366       | 1,696          |
|          | RIGHT            | 619         | 805            |
| WEST     | LEFT             | 0           | 0              |
| BOUND    | THRU             | 1,589       | 2,166          |
|          | RIGHT            | 174         | 232            |



**17. SR-57 NB Ramps at Imperial Highway**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 803         | NORTHBOUND |             |
| BOUND    | THRU             | 43          | IN ...     | 1593        |
|          | RIGHT            | 761         | OUT ...    | 515         |
| SOUTH    | LEFT             | 0           | SOUTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 50          |
|          | RIGHT            | 50          | OUT ...    | 177         |
| EAST     | LEFT             | 116         | EASTBOUND  |             |
| BOUND    | THRU             | 1241        | IN ...     | 2150        |
|          | RIGHT            | 515         | OUT ...    | 2407        |
| WEST     | LEFT             | 0           | WESTBOUND  |             |
| BOUND    | THRU             | 1355        | IN ...     | 1636        |
|          | RIGHT            | 18          | OUT ...    | 2331        |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 803         | 1,125          |
| BOUND    | THRU             | 43          | 38             |
|          | RIGHT            | 761         | 949            |
|          | RIGHT            | 50          | 96             |
| SOUTH    | LEFT             | 0           | 0              |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 50          | 96             |
|          | RIGHT            | 50          | 96             |
| EAST     | LEFT             | 116         | 118            |
| BOUND    | THRU             | 1,241       | 1,520          |
|          | RIGHT            | 515         | 627            |
|          | RIGHT            | 515         | 627            |
| WEST     | LEFT             | 0           | 0              |
| BOUND    | THRU             | 1,355       | 1,721          |
|          | RIGHT            | 18          | 21             |

**18. Associated Road at Imperial Highway**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL  |
|----------------|-----------------------|-------------------|---------------------------------|--------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 140<br>198<br>68  | NORTHBOUND<br>IN ...<br>OUT ... | 410<br>341   |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 142<br>314<br>139 | SOUTHBOUND<br>IN ...<br>OUT ... | 429<br>345   |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 142<br>1758<br>95 | EASTBOUND<br>IN ...<br>OUT ...  | 2324<br>2047 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 88<br>1505<br>80  | WESTBOUND<br>IN ...<br>OUT ...  | 1966<br>2396 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT        | FY<br>FORECAST      |
|----------------|-----------------------|--------------------|---------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 140<br>198<br>68   | 168<br>238<br>94    |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 142<br>314<br>139  | 190<br>378<br>183   |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 142<br>1,758<br>95 | 237<br>2,165<br>113 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 88<br>1,505<br>80  | 105<br>1,792<br>113 |

**19. Castlegate Lane/Placentia Avenue at Imperial Highway**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL    |
|----------------|-----------------------|-------------------|---------------------------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 163<br>11<br>138  | NORTHBOUND<br>IN ...<br>OUT ... | 335<br>708     |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 24<br>27<br>13    | SOUTHBOUND<br>IN ...<br>OUT ... | 64<br>54       |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 12<br>1721<br>339 | EASTBOUND<br>IN ...<br>OUT ...  | 2,500<br>1,846 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 167<br>1377<br>31 | WESTBOUND<br>IN ...<br>OUT ...  | 1,862<br>2,154 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT        | FY<br>FORECAST     |
|----------------|-----------------------|--------------------|--------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 163<br>11<br>138   | 191<br>14<br>167   |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 24<br>27<br>13     | 28<br>33<br>16     |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 12<br>1,721<br>339 | 14<br>2,150<br>478 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 167<br>1,377<br>31 | 201<br>1,741<br>37 |

**20. Kraemer Boulevard at Imperial Highway**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 163         | NORTHBOUND |             |
| BOUND    | THRU             | 231         | IN ...     | 392         |
|          | RIGHT            | 81          | OUT ...    | 1,062       |
| SOUTH    | LEFT             | 308         | SOUTHBOUND |             |
| BOUND    | THRU             | 608         | IN ...     | 1,305       |
|          | RIGHT            | 105         | OUT ...    | 280         |
| EAST     | LEFT             | 128         | EASTBOUND  |             |
| BOUND    | THRU             | 1187        | IN ...     | 1,762       |
|          | RIGHT            | 227         | OUT ...    | 1,500       |
| WEST     | LEFT             | 67          | WESTBOUND  |             |
| BOUND    | THRU             | 982         | IN ...     | 1,301       |
|          | RIGHT            | 84          | OUT ...    | 1,919       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 163         | 202            |
| BOUND    | THRU             | 231         | 276            |
|          | RIGHT            | 81          | 99             |
| SOUTH    | LEFT             | 308         | 413            |
| BOUND    | THRU             | 608         | 744            |
|          | RIGHT            | 105         | 148            |
| EAST     | LEFT             | 128         | 155            |
| BOUND    | THRU             | 1,187       | 1,498          |
|          | RIGHT            | 227         | 276            |
| WEST     | LEFT             | 67          | 81             |
| BOUND    | THRU             | 982         | 1,260          |
|          | RIGHT            | 84          | 101            |

**21. Valencia Avenue at Imperial Highway**

**AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| NORTH    | LEFT             | 121         | NORTHBOUND |             |
| BOUND    | THRU             | 167         | IN ...     | 420         |
|          | RIGHT            | 113         | OUT ...    | 492         |
| SOUTH    | LEFT             | 255         | SOUTHBOUND |             |
| BOUND    | THRU             | 254         | IN ...     | 758         |
|          | RIGHT            | 184         | OUT ...    | 521         |
| EAST     | LEFT             | 179         | EASTBOUND  |             |
| BOUND    | THRU             | 909         | IN ...     | 1,440       |
|          | RIGHT            | 84          | OUT ...    | 1,891       |
| WEST     | LEFT             | 111         | WESTBOUND  |             |
| BOUND    | THRU             | 1424        | IN ...     | 1,835       |
|          | RIGHT            | 134         | OUT ...    | 1,548       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| NORTH    | LEFT             | 121         | 151            |
| BOUND    | THRU             | 167         | 211            |
|          | RIGHT            | 113         | 135            |
| SOUTH    | LEFT             | 255         | 314            |
| BOUND    | THRU             | 254         | 330            |
|          | RIGHT            | 184         | 225            |
| EAST     | LEFT             | 179         | 207            |
| BOUND    | THRU             | 909         | 1,135          |
|          | RIGHT            | 84          | 99             |
| WEST     | LEFT             | 111         | 133            |
| BOUND    | THRU             | 1,424       | 1,775          |
|          | RIGHT            | 134         | 166            |

**22. Rose Drive at Imperial Highway  
AM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 234         | NORTHBOUND |             |
| BOUND    | THRU             | 181         | IN ...     | 596         |
|          | RIGHT            | 133         | OUT ...    | 1,073       |
| SOUTH    | LEFT             | 775         | SOUTHBOUND |             |
| BOUND    | THRU             | 444         | IN ...     | 1,387       |
|          | RIGHT            | 20          | OUT ...    | 718         |
| EAST     | LEFT             | 33          | EASTBOUND  |             |
| BOUND    | THRU             | 1106        | IN ...     | 1,628       |
|          | RIGHT            | 218         | OUT ...    | 1,715       |
| WEST     | LEFT             | 246         | WESTBOUND  |             |
| BOUND    | THRU             | 1295        | IN ...     | 2,202       |
|          | RIGHT            | 501         | OUT ...    | 2,307       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 234         | 280            |
| BOUND    | THRU             | 181         | 216            |
|          | RIGHT            | 133         | 160            |
|          | LEFT             | 775         | 959            |
| SOUTH    | THRU             | 444         | 518            |
|          | RIGHT            | 20          | 23             |
|          | LEFT             | 33          | 40             |
| EAST     | THRU             | 1,106       | 1,385          |
|          | RIGHT            | 218         | 277            |
|          | LEFT             | 246         | 294            |
| WEST     | THRU             | 1,295       | 1,625          |
|          | RIGHT            | 501         | 614            |

**1. State College Boulevard at Lambert Road**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL  |
|----------------|-----------------------|-------------------|---------------------------------|--------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 294<br>558<br>242 | NORTHBOUND<br>IN ...<br>OUT ... | 1159<br>892  |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 529<br>359<br>14  | SOUTHBOUND<br>IN ...<br>OUT ... | 848<br>1259  |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 37<br>1108<br>238 | EASTBOUND<br>IN ...<br>OUT ...  | 1208<br>1386 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 303<br>979<br>666 | WESTBOUND<br>IN ...<br>OUT ...  | 2024<br>1703 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT        | FY<br>FORECAST      |
|----------------|-----------------------|--------------------|---------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 294<br>558<br>242  | 368<br>685<br>345   |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 529<br>359<br>14   | 637<br>455<br>17    |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 37<br>1,108<br>238 | 44<br>1,679<br>302  |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 303<br>979<br>666  | 443<br>1,350<br>801 |

**2. SR-57 SB Ramps at Lambert Road**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 0           | NORTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 0           |
|          | RIGHT            | 0           | OUT ...    | 920         |
| SOUTH    | LEFT             | 430         | SOUTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 1138        |
|          | RIGHT            | 675         | OUT ...    | 0           |
| EAST     | LEFT             | 0           | EASTBOUND  |             |
| BOUND    | THRU             | 1079        | IN ...     | 1627        |
|          | RIGHT            | 724         | OUT ...    | 2313        |
| WEST     | LEFT             | 219         | WESTBOUND  |             |
| BOUND    | THRU             | 1562        | IN ...     | 1867        |
|          | RIGHT            | 0           | OUT ...    | 1399        |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 0           | 0              |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 0           | 0              |
| SOUTH    | LEFT             | 430         | 477            |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 675         | 888            |
| EAST     | LEFT             | 0           | 0              |
| BOUND    | THRU             | 1,079       | 1,493          |
|          | RIGHT            | 724         | 877            |
| WEST     | LEFT             | 219         | 264            |
| BOUND    | THRU             | 1,562       | 1,821          |
|          | RIGHT            | 0           | 0              |



**3. SR-57 NB Ramps at Lambert Road**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH             | FY<br>TOTAL |
|----------------|------------------|-------------|----------------------|-------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 618<br>0    | NORTHBOUND<br>IN ... | 822         |
|                | RIGHT            | 253         | OUT ...              | 0           |
| SOUTH<br>BOUND | LEFT<br>THRU     | 0<br>0      | SOUTHBOUND<br>IN ... | 0           |
|                | RIGHT            | 0           | OUT ...              | 869         |
| EAST<br>BOUND  | LEFT<br>THRU     | 343<br>1365 | EASTBOUND<br>IN ...  | 1,598       |
|                | RIGHT            | 0           | OUT ...              | 1,696       |
| WEST<br>BOUND  | LEFT<br>THRU     | 0<br>992    | WESTBOUND<br>IN ...  | 1,670       |
|                | RIGHT            | 497         | OUT ...              | 1,525       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT  | FY<br>FORECAST |
|----------------|------------------|--------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 618<br>0     | 710<br>0       |
|                | RIGHT            | 253          | 316            |
| SOUTH<br>BOUND | LEFT<br>THRU     | 0<br>0       | 0<br>0         |
|                | RIGHT            | 0            | 0              |
| EAST<br>BOUND  | LEFT<br>THRU     | 343<br>1,365 | 600<br>1,602   |
|                | RIGHT            | 0            | 0              |
| WEST<br>BOUND  | LEFT<br>THRU     | 0<br>992     | 0<br>1,188     |
|                | RIGHT            | 497          | 554            |

**4. Pointe Drive at Lambert Road**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| NORTH    | LEFT             | 109         | NORTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 135         |
|          | RIGHT            | 26          | OUT ...    | 51          |
| SOUTH    | LEFT             | 95          | SOUTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 467         |
|          | RIGHT            | 372         | OUT ...    | 201         |
| EAST     | LEFT             | 159         | EASTBOUND  |             |
| BOUND    | THRU             | 1723        | IN ...     | 1,826       |
|          | RIGHT            | 37          | OUT ...    | 2,016       |
| WEST     | LEFT             | 14          | WESTBOUND  |             |
| BOUND    | THRU             | 1354        | IN ...     | 1,591       |
|          | RIGHT            | 42          | OUT ...    | 1,751       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| NORTH    | LEFT             | 109         | 130            |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 26          | 32             |
| SOUTH    | LEFT             | 95          | 126            |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 372         | 469            |
| EAST     | LEFT             | 159         | 214            |
| BOUND    | THRU             | 1,723       | 2,187          |
|          | RIGHT            | 37          | 44             |
| WEST     | LEFT             | 14          | 17             |
| BOUND    | THRU             | 1,354       | 1,704          |
|          | RIGHT            | 42          | 63             |

**5. Wildcat Way/N Associated Road at Lambert Road**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL    |
|----------------|-----------------------|-------------------|---------------------------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 125<br>48<br>19   | NORTHBOUND<br>IN ...<br>OUT ... | 194<br>300     |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 77<br>94<br>125   | SOUTHBOUND<br>IN ...<br>OUT ... | 296<br>129     |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 41<br>1633<br>186 | EASTBOUND<br>IN ...<br>OUT ...  | 1,755<br>1,613 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 23<br>1181<br>40  | WESTBOUND<br>IN ...<br>OUT ...  | 1,424<br>1,627 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT        | FY<br>FORECAST     |
|----------------|-----------------------|--------------------|--------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 125<br>48<br>19    | 154<br>62<br>23    |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 77<br>94<br>125    | 92<br>118<br>150   |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 41<br>1,633<br>186 | 49<br>2,090<br>227 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 23<br>1,181<br>40  | 26<br>1,506<br>48  |

**6. Santa Fe Road/Kraemer Boulevard at Lambert Road**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL    |
|----------------|-----------------------|-------------------|---------------------------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 474<br>279<br>207 | NORTHBOUND<br>IN ...<br>OUT ... | 1,105<br>517   |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 4<br>94<br>108    | SOUTHBOUND<br>IN ...<br>OUT ... | 206<br>477     |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 172<br>787<br>447 | EASTBOUND<br>IN ...<br>OUT ...  | 1,303<br>1,093 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 74<br>312<br>26   | WESTBOUND<br>IN ...<br>OUT ...  | 438<br>964     |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | FY<br>FORECAST      |
|----------------|-----------------------|-------------------|---------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 474<br>279<br>207 | 611<br>343<br>247   |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 4<br>94<br>108    | 5<br>122<br>126     |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 172<br>787<br>447 | 209<br>1,073<br>536 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 74<br>312<br>26   | 87<br>462<br>32     |

**7. Sunflower Street at Lambert Road**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH             | FY<br>TOTAL |
|----------------|------------------|-------------|----------------------|-------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 24<br>2     | NORTHBOUND<br>IN ... | 38          |
|                | RIGHT            | 11          | OUT ...              | 26          |
| SOUTH<br>BOUND | LEFT<br>THRU     | 2<br>0      | SOUTHBOUND<br>IN ... | 7           |
|                | RIGHT            | 5           | OUT ...              | 10          |
| EAST<br>BOUND  | LEFT<br>THRU     | 5<br>1154   | EASTBOUND<br>IN ...  | 1,144       |
|                | RIGHT            | 19          | OUT ...              | 618         |
| WEST<br>BOUND  | LEFT<br>THRU     | 5<br>563    | WESTBOUND<br>IN ...  | 597         |
|                | RIGHT            | 3           | OUT ...              | 1,134       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------------|------------------|-------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 24<br>2     | 28<br>2        |
|                | RIGHT            | 11          | 14             |
| SOUTH<br>BOUND | LEFT<br>THRU     | 2<br>0      | 2<br>0         |
|                | RIGHT            | 5           | 6              |
| EAST<br>BOUND  | LEFT<br>THRU     | 5<br>1,154  | 6<br>1,513     |
|                | RIGHT            | 19          | 23             |
| WEST<br>BOUND  | LEFT<br>THRU     | 5<br>563    | 6<br>761       |
|                | RIGHT            | 3           | 3              |

**8. Valencia Avenue at Lambert Road/Carbon Canyon Road**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 308         | NORTHBOUND |             |
| BOUND    | THRU             | 132         | IN ...     | 1,217       |
|          | RIGHT            | 694         | OUT ...    | 660         |
| SOUTH    | LEFT             | 23          | SOUTHBOUND |             |
| BOUND    | THRU             | 99          | IN ...     | 152         |
|          | RIGHT            | 30          | OUT ...    | 165         |
| EAST     | LEFT             | 25          | EASTBOUND  |             |
| BOUND    | THRU             | 687         | IN ...     | 1,124       |
|          | RIGHT            | 445         | OUT ...    | 593         |
| WEST     | LEFT             | 130         | WESTBOUND  |             |
| BOUND    | THRU             | 229         | IN ...     | 381         |
|          | RIGHT            | 8           | OUT ...    | 1,454       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 308         | 369            |
| BOUND    | THRU             | 132         | 162            |
|          | RIGHT            | 694         | 869            |
| SOUTH    | LEFT             | 23          | 27             |
| BOUND    | THRU             | 99          | 124            |
|          | RIGHT            | 30          | 38             |
| EAST     | LEFT             | 25          | 33             |
| BOUND    | THRU             | 687         | 951            |
|          | RIGHT            | 445         | 532            |
| WEST     | LEFT             | 130         | 180            |
| BOUND    | THRU             | 229         | 359            |
|          | RIGHT            | 8           | 9              |

**9. Santa Fe Road at Carbon Canyon Road**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH             | FY<br>TOTAL |
|----------------|------------------|-------------|----------------------|-------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 10<br>0     | NORTHBOUND<br>IN ... | 12          |
|                | RIGHT            | 2           | OUT ...              | 3           |
| SOUTH<br>BOUND | LEFT<br>THRU     | 0<br>0      | SOUTHBOUND<br>IN ... | 23          |
|                | RIGHT            | 14          | OUT ...              | 15          |
| EAST<br>BOUND  | LEFT<br>THRU     | 1<br>1426   | EASTBOUND<br>IN ...  | 1479        |
|                | RIGHT            | 2           | OUT ...              | 326         |
| WEST<br>BOUND  | LEFT<br>THRU     | 1<br>288    | WESTBOUND<br>IN ...  | 301         |
|                | RIGHT            | 7           | OUT ...              | 1471        |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------------|------------------|-------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU     | 10<br>0     | 12<br>0        |
|                | RIGHT            | 2           | 2              |
| SOUTH<br>BOUND | LEFT<br>THRU     | 0<br>0      | 0<br>0         |
|                | RIGHT            | 14          | 23             |
| EAST<br>BOUND  | LEFT<br>THRU     | 1<br>1,426  | 2<br>1,866     |
|                | RIGHT            | 2           | 2              |
| WEST<br>BOUND  | LEFT<br>THRU     | 1<br>288    | 1<br>444       |
|                | RIGHT            | 7           | 13             |

**10. State College Boulevard at Birch Street**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL  |
|----------------|-----------------------|-------------------|---------------------------------|--------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 135<br>337<br>150 | NORTHBOUND<br>IN ...<br>OUT ... | 696<br>599   |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 301<br>309<br>250 | SOUTHBOUND<br>IN ...<br>OUT ... | 834<br>1165  |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 188<br>720<br>150 | EASTBOUND<br>IN ...<br>OUT ...  | 1112<br>1395 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 135<br>922<br>584 | WESTBOUND<br>IN ...<br>OUT ...  | 1728<br>1212 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | FY<br>FORECAST      |
|----------------|-----------------------|-------------------|---------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 135<br>337<br>150 | 157<br>468<br>180   |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 301<br>309<br>250 | 393<br>415<br>363   |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 188<br>720<br>150 | 320<br>889<br>182   |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 135<br>922<br>584 | 162<br>1,135<br>749 |



**11. S Associated Road at Birch Street**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 447         | NORTHBOUND |             |
| BOUND    | THRU             | 31          | IN ...     | 807         |
|          | RIGHT            | 333         | OUT ...    | 531         |
| SOUTH    | LEFT             | 10          | SOUTHBOUND |             |
| BOUND    | THRU             | 19          | IN ...     | 35          |
|          | RIGHT            | 6           | OUT ...    | 59          |
| EAST     | LEFT             | 12          | EASTBOUND  |             |
| BOUND    | THRU             | 828         | IN ...     | 1,145       |
|          | RIGHT            | 278         | OUT ...    | 1,684       |
| WEST     | LEFT             | 275         | WESTBOUND  |             |
| BOUND    | THRU             | 1176        | IN ...     | 1,518       |
|          | RIGHT            | 16          | OUT ...    | 1,232       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 447         | 559            |
| BOUND    | THRU             | 31          | 37             |
|          | RIGHT            | 333         | 398            |
|          | RIGHT            | 333         | 398            |
| SOUTH    | LEFT             | 10          | 11             |
| BOUND    | THRU             | 19          | 23             |
|          | RIGHT            | 6           | 11             |
|          | RIGHT            | 6           | 11             |
| EAST     | LEFT             | 12          | 17             |
| BOUND    | THRU             | 828         | 1,032          |
|          | RIGHT            | 278         | 349            |
|          | RIGHT            | 278         | 349            |
| WEST     | LEFT             | 275         | 329            |
| BOUND    | THRU             | 1,176       | 1,461          |
|          | RIGHT            | 16          | 19             |

**12. N Associated Road at Birch Street**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 12          | NORTHBOUND |             |
| BOUND    | THRU             | 2           | IN ...     | 24          |
|          | RIGHT            | 10          | OUT ...    | 19          |
| SOUTH    | LEFT             | 96          | SOUTHBOUND |             |
| BOUND    | THRU             | 3           | IN ...     | 375         |
|          | RIGHT            | 275         | OUT ...    | 400         |
| EAST     | LEFT             | 265         | EASTBOUND  |             |
| BOUND    | THRU             | 864         | IN ...     | 1,201       |
|          | RIGHT            | 11          | OUT ...    | 1,551       |
| WEST     | LEFT             | 5           | WESTBOUND  |             |
| BOUND    | THRU             | 1213        | IN ...     | 1,402       |
|          | RIGHT            | 127         | OUT ...    | 1,032       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 12          | 15             |
| BOUND    | THRU             | 2           | 2              |
|          | RIGHT            | 10          | 12             |
| SOUTH    | LEFT             | 96          | 119            |
| BOUND    | THRU             | 3           | 3              |
|          | RIGHT            | 275         | 335            |
| EAST     | LEFT             | 265         | 321            |
| BOUND    | THRU             | 864         | 1,070          |
|          | RIGHT            | 11          | 14             |
| WEST     | LEFT             | 5           | 6              |
| BOUND    | THRU             | 1,213       | 1,498          |
|          | RIGHT            | 127         | 156            |

**13. Kraemer Boulevard at Birch Street**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 563         | NORTHBOUND |             |
| BOUND    | THRU             | 697         | IN ...     | 1,479       |
|          | RIGHT            | 117         | OUT ...    | 581         |
| SOUTH    | LEFT             | 204         | SOUTHBOUND |             |
| BOUND    | THRU             | 353         | IN ...     | 552         |
|          | RIGHT            | 97          | OUT ...    | 1,272       |
| EAST     | LEFT             | 204         | EASTBOUND  |             |
| BOUND    | THRU             | 678         | IN ...     | 1,221       |
|          | RIGHT            | 278         | OUT ...    | 1,368       |
| WEST     | LEFT             | 73          | WESTBOUND  |             |
| BOUND    | THRU             | 647         | IN ...     | 1,037       |
|          | RIGHT            | 201         | OUT ...    | 1,067       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 563         | 674            |
| BOUND    | THRU             | 697         | 841            |
|          | RIGHT            | 117         | 141            |
|          | LEFT             | 204         | 245            |
| SOUTH    | THRU             | 353         | 426            |
|          | RIGHT            | 97          | 121            |
|          | LEFT             | 204         | 249            |
| EAST     | THRU             | 678         | 846            |
|          | RIGHT            | 278         | 333            |
|          | LEFT             | 73          | 88             |
| WEST     | THRU             | 647         | 821            |
|          | RIGHT            | 201         | 251            |

**14. Valencia Avenue at Birch Street/Rose Drive**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | APPROACH                        | FY<br>TOTAL    |
|----------------|-----------------------|-------------------|---------------------------------|----------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 186<br>510<br>14  | NORTHBOUND<br>IN ...<br>OUT ... | 817<br>344     |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 416<br>205<br>36  | SOUTHBOUND<br>IN ...<br>OUT ... | 643<br>1,468   |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 168<br>582<br>130 | EASTBOUND<br>IN ...<br>OUT ...  | 954<br>718     |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 11<br>430<br>707  | WESTBOUND<br>IN ...<br>OUT ...  | 1,198<br>1,082 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT       | FY<br>FORECAST    |
|----------------|-----------------------|-------------------|-------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 186<br>510<br>14  | 221<br>649<br>18  |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 416<br>205<br>36  | 498<br>270<br>48  |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 168<br>582<br>130 | 206<br>719<br>155 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 11<br>430<br>707  | 14<br>548<br>846  |

**15. Rose Drive at Vesuvius Drive**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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| APPROACH    | TURN MOVEMENT | BY COUNT   | APPROACH          | FY TOTAL |
|-------------|---------------|------------|-------------------|----------|
| NORTH BOUND | LEFT THRU     | 26<br>1000 | NORTHBOUND IN ... | 1,173    |
|             | RIGHT         | 0          | OUT ...           | 1,158    |
| SOUTH BOUND | LEFT THRU     | 0<br>1061  | SOUTHBOUND IN ... | 1,146    |
|             | RIGHT         | 15         | OUT ...           | 1,057    |
| EAST BOUND  | LEFT THRU     | 7<br>0     | EASTBOUND IN ...  | 167      |
|             | RIGHT         | 18         | OUT ...           | 270      |
| WEST BOUND  | LEFT THRU     | 0<br>0     | WESTBOUND IN ...  | 0        |
|             | RIGHT         | 0          | OUT ...           | 0        |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH    | TURN MOVEMENT | BY COUNT    | FY FORECAST  |
|-------------|---------------|-------------|--------------|
| NORTH BOUND | LEFT THRU     | 26<br>1,000 | 169<br>1,231 |
|             | RIGHT         | 0           | 0            |
| SOUTH BOUND | LEFT THRU     | 0<br>1,061  | 0<br>1,294   |
|             | RIGHT         | 15          | 101          |
| EAST BOUND  | LEFT THRU     | 7<br>0      | 49<br>0      |
|             | RIGHT         | 18          | 118          |
| WEST BOUND  | LEFT THRU     | 0<br>0      | 0<br>0       |
|             | RIGHT         | 0           | 0            |

**16. SR-57 SB Ramps at Imperial Highway**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

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| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 0           | NORTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 0           |
|          | RIGHT            | 0           | OUT ...    | 821         |
| SOUTH    | LEFT             | 632         | SOUTHBOUND |             |
| BOUND    | THRU             | 0           | IN ...     | 1,191       |
|          | RIGHT            | 502         | OUT ...    | 375         |
| EAST     | LEFT             | 0           | EASTBOUND  |             |
| BOUND    | THRU             | 1567        | IN ...     | 2,739       |
|          | RIGHT            | 862         | OUT ...    | 2,943       |
| WEST     | LEFT             | 0           | WESTBOUND  |             |
| BOUND    | THRU             | 2079        | IN ...     | 2,686       |
|          | RIGHT            | 375         | OUT ...    | 2,476       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 0           | 0              |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 0           | 0              |
| SOUTH    | LEFT             | 632         | 767            |
| BOUND    | THRU             | 0           | 0              |
|          | RIGHT            | 502         | 601            |
| EAST     | LEFT             | 0           | 0              |
| BOUND    | THRU             | 1,567       | 1,886          |
|          | RIGHT            | 862         | 1,130          |
| WEST     | LEFT             | 0           | 0              |
| BOUND    | THRU             | 2,079       | 2,640          |
|          | RIGHT            | 375         | 474            |

**17. SR-57 NB Ramps at Imperial Highway**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT        | APPROACH                        | FY<br>TOTAL  |
|----------------|-----------------------|--------------------|---------------------------------|--------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 848<br>72<br>397   | NORTHBOUND<br>IN ...<br>OUT ... | 1316<br>345  |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 0<br>0<br>231      | SOUTHBOUND<br>IN ...<br>OUT ... | 231<br>324   |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 206<br>1670<br>345 | EASTBOUND<br>IN ...<br>OUT ...  | 2367<br>3639 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 0<br>2186<br>46    | WESTBOUND<br>IN ...<br>OUT ...  | 2563<br>2169 |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH       | TURN<br>MOVEMENT      | BY<br>COUNT         | FY<br>FORECAST      |
|----------------|-----------------------|---------------------|---------------------|
| NORTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 848<br>72<br>397    | 1,115<br>76<br>506  |
| SOUTH<br>BOUND | LEFT<br>THRU<br>RIGHT | 0<br>0<br>231       | 0<br>0<br>232       |
| EAST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 206<br>1,670<br>345 | 213<br>2,109<br>421 |
| WEST<br>BOUND  | LEFT<br>THRU<br>RIGHT | 0<br>2,186<br>46    | 0<br>2,757<br>46    |

**18. Associated Road at Imperial Highway**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 205         | NORTHBOUND |             |
| BOUND    | THRU             | 247         | IN ...     | 531         |
|          | RIGHT            | 80          | OUT ...    | 625         |
| SOUTH    | LEFT             | 278         | SOUTHBOUND |             |
| BOUND    | THRU             | 333         | IN ...     | 758         |
|          | RIGHT            | 212         | OUT ...    | 551         |
| EAST     | LEFT             | 240         | EASTBOUND  |             |
| BOUND    | THRU             | 1697        | IN ...     | 2171        |
|          | RIGHT            | 132         | OUT ...    | 2345        |
| WEST     | LEFT             | 167         | WESTBOUND  |             |
| BOUND    | THRU             | 1597        | IN ...     | 2330        |
|          | RIGHT            | 163         | OUT ...    | 2269        |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 205         | 245            |
| BOUND    | THRU             | 247         | 296            |
|          | RIGHT            | 80          | 103            |
| SOUTH    | LEFT             | 278         | 336            |
| BOUND    | THRU             | 333         | 399            |
|          | RIGHT            | 212         | 289            |
| EAST     | LEFT             | 240         | 309            |
| BOUND    | THRU             | 1,697       | 2,150          |
|          | RIGHT            | 132         | 158            |
| WEST     | LEFT             | 167         | 210            |
| BOUND    | THRU             | 1,597       | 1,950          |
|          | RIGHT            | 163         | 213            |



**19. Castlegate Lane/Placentia Avenue at Imperial Highway**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 225         | NORTHBOUND |             |
| BOUND    | THRU             | 45          | IN ...     | 597         |
|          | RIGHT            | 253         | OUT ...    | 515         |
| SOUTH    | LEFT             | 24          | SOUTHBOUND |             |
| BOUND    | THRU             | 22          | IN ...     | 59          |
|          | RIGHT            | 13          | OUT ...    | 117         |
| EAST     | LEFT             | 18          | EASTBOUND  |             |
| BOUND    | THRU             | 1713        | IN ...     | 2,208       |
|          | RIGHT            | 263         | OUT ...    | 2,405       |
| WEST     | LEFT             | 219         | WESTBOUND  |             |
| BOUND    | THRU             | 1764        | IN ...     | 2,383       |
|          | RIGHT            | 54          | OUT ...    | 2,211       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 225         | 275            |
| BOUND    | THRU             | 45          | 54             |
|          | RIGHT            | 253         | 307            |
| SOUTH    | LEFT             | 24          | 29             |
| BOUND    | THRU             | 22          | 26             |
|          | RIGHT            | 13          | 16             |
| EAST     | LEFT             | 18          | 22             |
| BOUND    | THRU             | 1,713       | 2,176          |
|          | RIGHT            | 263         | 313            |
| WEST     | LEFT             | 219         | 267            |
| BOUND    | THRU             | 1,764       | 2,231          |
|          | RIGHT            | 54          | 66             |

**20. Kraemer Boulevard at Imperial Highway**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| NORTH    | LEFT             | 338         | NORTHBOUND |             |
| BOUND    | THRU             | 580         | IN ...     | 1,122       |
|          | RIGHT            | 97          | OUT ...    | 819         |
| SOUTH    | LEFT             | 251         | SOUTHBOUND |             |
| BOUND    | THRU             | 445         | IN ...     | 680         |
|          | RIGHT            | 107         | OUT ...    | 1,187       |
| EAST     | LEFT             | 202         | EASTBOUND  |             |
| BOUND    | THRU             | 1272        | IN ...     | 1,794       |
|          | RIGHT            | 198         | OUT ...    | 2,161       |
| WEST     | LEFT             | 174         | WESTBOUND  |             |
| BOUND    | THRU             | 1406        | IN ...     | 2,237       |
|          | RIGHT            | 303         | OUT ...    | 1,667       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| NORTH    | LEFT             | 338         | 418            |
| BOUND    | THRU             | 580         | 694            |
|          | RIGHT            | 97          | 118            |
|          | LEFT             | 251         | 300            |
| SOUTH    | THRU             | 445         | 532            |
|          | RIGHT            | 107         | 133            |
|          | LEFT             | 202         | 247            |
| EAST     | THRU             | 1,272       | 1,620          |
|          | RIGHT            | 198         | 251            |
|          | LEFT             | 174         | 211            |
| WEST     | THRU             | 1,406       | 1,777          |
|          | RIGHT            | 303         | 364            |

**21. Valencia Avenue at Imperial Highway**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| -----    | -----            | ----        | -----      | -----       |
| NORTH    | LEFT             | 103         | NORTHBOUND |             |
| BOUND    | THRU             | 227         | IN ...     | 539         |
|          | RIGHT            | 121         | OUT ...    | 478         |
| SOUTH    | LEFT             | 196         | SOUTHBOUND |             |
| BOUND    | THRU             | 190         | IN ...     | 545         |
|          | RIGHT            | 122         | OUT ...    | 679         |
| EAST     | LEFT             | 216         | EASTBOUND  |             |
| BOUND    | THRU             | 1638        | IN ...     | 2,034       |
|          | RIGHT            | 134         | OUT ...    | 1,724       |
| WEST     | LEFT             | 158         | WESTBOUND  |             |
| BOUND    | THRU             | 1204        | IN ...     | 1,786       |
|          | RIGHT            | 118         | OUT ...    | 2,022       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| -----    | -----            | ----        | -----          |
| NORTH    | LEFT             | 103         | 131            |
| BOUND    | THRU             | 227         | 298            |
|          | RIGHT            | 121         | 145            |
| SOUTH    | LEFT             | 196         | 240            |
| BOUND    | THRU             | 190         | 245            |
|          | RIGHT            | 122         | 148            |
| EAST     | LEFT             | 216         | 265            |
| BOUND    | THRU             | 1,638       | 2,040          |
|          | RIGHT            | 134         | 171            |
| WEST     | LEFT             | 158         | 189            |
| BOUND    | THRU             | 1,204       | 1,465          |
|          | RIGHT            | 118         | 154            |

**22. Rose Drive at Imperial Highway**

**PM PEAK HOUR**

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* INPUT DATA \*\*\* Modified by: COMSIS Corp. (M. Roskin) 4/9/86

Modified by: FHWA 12/21/87

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | APPROACH   | FY<br>TOTAL |
|----------|------------------|-------------|------------|-------------|
| NORTH    | LEFT             | 238         | NORTHBOUND |             |
| BOUND    | THRU             | 468         | IN ...     | 1,001       |
|          | RIGHT            | 113         | OUT ...    | 890         |
| SOUTH    | LEFT             | 843         | SOUTHBOUND |             |
| BOUND    | THRU             | 407         | IN ...     | 1,347       |
|          | RIGHT            | 18          | OUT ...    | 1,390       |
| EAST     | LEFT             | 64          | EASTBOUND  |             |
| BOUND    | THRU             | 1587        | IN ...     | 1,981       |
|          | RIGHT            | 263         | OUT ...    | 1,779       |
| WEST     | LEFT             | 147         | WESTBOUND  |             |
| BOUND    | THRU             | 1217        | IN ...     | 2,408       |
|          | RIGHT            | 711         | OUT ...    | 2,679       |

FUTURE DIRECTIONAL TURN VOLUMES FROM FUTURE DIRECTIONAL LINK VOLUMES

NCHRP 255, PAGE 105 Written by: FHWA (C. Fleet)

\*\*\* RESULTS \*\*\* Modified by: COMSIS Corp. (M. Roskin) 2/13/86

| APPROACH | TURN<br>MOVEMENT | BY<br>COUNT | FY<br>FORECAST |
|----------|------------------|-------------|----------------|
| NORTH    | LEFT             | 238         | 306            |
| BOUND    | THRU             | 468         | 551            |
|          | RIGHT            | 113         | 143            |
|          | LEFT             | 843         | 1,032          |
| BOUND    | THRU             | 407         | 487            |
|          | RIGHT            | 18          | 22             |
|          | LEFT             | 64          | 77             |
| BOUND    | THRU             | 1,587       | 1,986          |
|          | RIGHT            | 263         | 315            |
|          | LEFT             | 147         | 176            |
| BOUND    | THRU             | 1,217       | 1,453          |
|          | RIGHT            | 711         | 885            |

**APPENDIX F**  
**SYNCHRO QUEUEING WORKSHEETS**

*APPENDIX F-1*  
**YEAR 2035 CUMULATIVE TRAFFIC CONDITIONS**

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

AM Year 2035  
 AM Year 2035



| Lane Group                 | EBL  | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR   | SBL   | SBT  | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑    | ↑↑    | ↑↑↑   |       |      |      |       | ↑↑    |      | ↑↑    |
| Traffic Volume (vph)       | 0    | 1855  | 619   | 256   | 2169  | 0     | 0    | 0    | 0     | 1045  | 0    | 695   |
| Future Volume (vph)        | 0    | 1855  | 619   | 256   | 2169  | 0     | 0    | 0    | 0     | 1045  | 0    | 695   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  | 1800  | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 0     | 70    |       | 0     | 0    |      | 0     | 0     |      | 0     |
| Storage Lanes              | 0    |       | 2     | 2     |       | 0     | 0    |      | 0     | 2     |      | 2     |
| Taper Length (ft)          | 90   |       |       | 90    |       |       | 90   |      |       | 90    |      |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.88  | 0.97  | 0.91  | 1.00  | 1.00 | 1.00 | 1.00  | 0.97  | 1.00 | 0.88  |
| Frt                        |      |       | 0.850 |       |       |       |      |      |       |       |      | 0.850 |
| Flt Protected              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (prot)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Flt Permitted              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (perm)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Right Turn on Red          |      |       | Yes   |       |       | Yes   |      |      | Yes   |       |      | Yes   |
| Satd. Flow (RTOR)          |      |       | 528   |       |       |       |      |      |       |       |      | 55    |
| Link Speed (mph)           |      | 45    |       |       | 45    |       |      | 30   |       |       |      | 30    |
| Link Distance (ft)         |      | 453   |       |       | 598   |       |      | 824  |       |       |      | 1360  |
| Travel Time (s)            |      | 6.9   |       |       | 9.1   |       |      | 18.7 |       |       |      | 30.9  |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1855  | 619   | 256   | 2169  | 0     | 0    | 0    | 0     | 1045  | 0    | 695   |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |      |      |       |       |      |       |
| Lane Group Flow (vph)      | 0    | 1855  | 619   | 256   | 2169  | 0     | 0    | 0    | 0     | 1045  | 0    | 695   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    | No   | No   | No    | No    | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right | Left  | Left | Right |
| Median Width(ft)           |      | 24    |       |       | 24    |       |      | 24   |       |       |      | 24    |
| Link Offset(ft)            |      | 0     |       |       | 0     |       |      | 0    |       |       |      | 0     |
| Crosswalk Width(ft)        |      | 16    |       |       | 16    |       |      | 16   |       |       |      | 16    |
| Two way Left Turn Lane     |      |       |       |       |       |       |      |      |       |       |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     | 15    |      | 9     |
| Number of Detectors        |      | 2     | 1     | 1     | 2     |       |      |      |       | 1     |      | 1     |
| Detector Template          |      | Thru  | Right | Left  | Thru  |       |      |      |       | Left  |      | Right |
| Leading Detector (ft)      |      | 100   | 20    | 20    | 100   |       |      |      |       | 20    |      | 20    |
| Trailing Detector (ft)     |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Size(ft)        |      | 6     | 20    | 20    | 6     |       |      |      |       | 20    |      | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |      |      |       | Cl+Ex |      | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 2 Position(ft)    |      | 94    |       |       | 94    |       |      |      |       |       |      |       |
| Detector 2 Size(ft)        |      | 6     |       |       | 6     |       |      |      |       |       |      |       |
| Detector 2 Type            |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |       |      |       |
| Detector 2 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |       | 0.0   |       |      |      |       |       |      |       |
| Turn Type                  |      | NA    | Perm  | Prot  | NA    |       |      |      |       | Prot  |      | Prot  |
| Protected Phases           |      | 2     |       | 1     | 6     |       |      |      |       | 4     |      | 4     |
| Permitted Phases           |      |       | 2     |       |       |       |      |      |       |       |      |       |

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

AM Year 2035  
 AM Year 2035



| Lane Group              | EBL | EBT   | EBR   | WBL   | WBT   | WBR | NBL | NBT | NBR | SBL   | SBT  | SBR   |
|-------------------------|-----|-------|-------|-------|-------|-----|-----|-----|-----|-------|------|-------|
| Detector Phase          |     | 2     | 2     | 1     | 6     |     |     |     |     | 4     |      | 4     |
| Switch Phase            |     |       |       |       |       |     |     |     |     |       |      |       |
| Minimum Initial (s)     |     | 5.0   | 5.0   | 5.0   | 5.0   |     |     |     |     | 5.0   |      | 5.0   |
| Minimum Split (s)       |     | 20.5  | 20.5  | 9.5   | 31.5  |     |     |     |     | 9.5   |      | 9.5   |
| Total Split (s)         |     | 56.1  | 56.1  | 15.9  | 72.0  |     |     |     |     | 48.0  |      | 48.0  |
| Total Split (%)         |     | 46.8% | 46.8% | 13.3% | 60.0% |     |     |     |     | 40.0% |      | 40.0% |
| Maximum Green (s)       |     | 51.6  | 51.6  | 11.4  | 67.5  |     |     |     |     | 43.5  |      | 43.5  |
| Yellow Time (s)         |     | 3.5   | 3.5   | 3.5   | 3.5   |     |     |     |     | 3.5   |      | 3.5   |
| All-Red Time (s)        |     | 1.0   | 1.0   | 1.0   | 1.0   |     |     |     |     | 1.0   |      | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |     |     |     | 0.0   |      | 0.0   |
| Total Lost Time (s)     |     | 4.5   | 4.5   | 4.5   | 4.5   |     |     |     |     | 4.5   |      | 4.5   |
| Lead/Lag                |     | Lead  | Lead  | Lag   |       |     |     |     |     |       |      |       |
| Lead-Lag Optimize?      |     | Yes   | Yes   | Yes   |       |     |     |     |     |       |      |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   | 3.0   | 3.0   |     |     |     |     | 3.0   |      | 3.0   |
| Recall Mode             |     | C-Max | C-Max | None  | C-Max |     |     |     |     | None  |      | None  |
| Walk Time (s)           |     | 7.0   | 7.0   |       | 7.0   |     |     |     |     |       |      |       |
| Flash Dont Walk (s)     |     | 9.0   | 9.0   |       | 20.0  |     |     |     |     |       |      |       |
| Pedestrian Calls (#/hr) |     | 2     | 2     |       | 2     |     |     |     |     |       |      |       |
| Act Effct Green (s)     |     | 52.6  | 52.6  | 11.4  | 68.5  |     |     |     |     | 42.5  |      | 42.5  |
| Actuated g/C Ratio      |     | 0.44  | 0.44  | 0.10  | 0.57  |     |     |     |     | 0.35  |      | 0.35  |
| v/c Ratio               |     | 0.88  | 0.43  | 0.83  | 0.79  |     |     |     |     | 0.91  |      | 0.72  |
| Control Delay           |     | 37.9  | 10.6  | 66.3  | 19.3  |     |     |     |     | 49.1  |      | 35.4  |
| Queue Delay             |     | 7.3   | 0.1   | 0.0   | 1.1   |     |     |     |     | 0.0   |      | 0.0   |
| Total Delay             |     | 45.1  | 10.8  | 66.3  | 20.4  |     |     |     |     | 49.1  |      | 35.4  |
| LOS                     |     | D     | B     | E     | C     |     |     |     |     | D     |      | D     |
| Approach Delay          |     | 36.5  |       |       | 25.2  |     |     |     |     |       | 43.6 |       |
| Approach LOS            |     | D     |       |       | C     |     |     |     |     |       | D    |       |
| Queue Length 50th (ft)  |     | 378   | 64    | 98    | 302   |     |     |     |     | 388   |      | 239   |
| Queue Length 95th (ft)  |     | m400  | m73   | m#138 | m358  |     |     |     |     | #508  |      | 318   |
| Internal Link Dist (ft) |     | 373   |       |       | 518   |     |     | 744 |     |       | 1280 |       |
| Turn Bay Length (ft)    |     |       |       | 70    |       |     |     |     |     |       |      |       |
| Base Capacity (vph)     |     | 2111  | 1453  | 308   | 2750  |     |     |     |     | 1178  |      | 992   |
| Starvation Cap Reductn  |     | 199   | 194   | 0     | 114   |     |     |     |     | 0     |      | 0     |
| Spillback Cap Reductn   |     | 235   | 0     | 0     | 323   |     |     |     |     | 0     |      | 3     |
| Storage Cap Reductn     |     | 0     | 0     | 0     | 0     |     |     |     |     | 0     |      | 0     |
| Reduced v/c Ratio       |     | 0.99  | 0.49  | 0.83  | 0.89  |     |     |     |     | 0.89  |      | 0.70  |

Intersection Summary

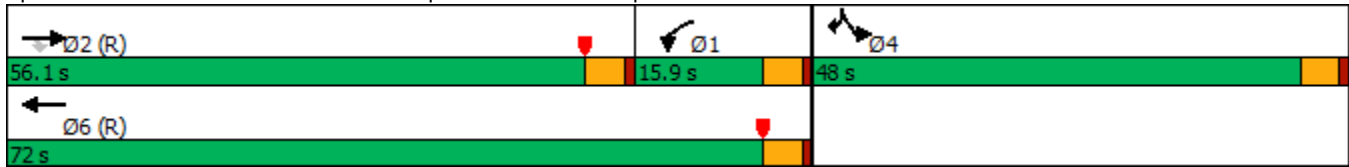
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 80  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 34.3  
 Intersection LOS: C  
 Intersection Capacity Utilization 87.8%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.



Queue shown is maximum after two cycles.

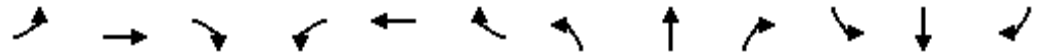
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road



Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

AM Year 2035  
 AM Year 2035



| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT  | NBR   | SBL  | SBT  | SBR   |
|----------------------------|------|-------|-------|------|-------|-------|-------|------|-------|------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑     |      | ↑↑↑   | ↑     | ↑↑    |      | ↑     |      |      |       |
| Traffic Volume (vph)       | 0    | 2505  | 404   | 0    | 1386  | 487   | 1051  | 0    | 506   | 0    | 0    | 0     |
| Future Volume (vph)        | 0    | 2505  | 404   | 0    | 1386  | 487   | 1051  | 0    | 506   | 0    | 0    | 0     |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800 | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 100   | 0    |       | 0     | 215   |      | 0     | 0    |      | 0     |
| Storage Lanes              | 0    |       | 1     | 0    |       | 1     | 1     |      | 1     | 0    |      | 0     |
| Taper Length (ft)          | 90   |       |       | 90   |       |       | 90    |      |       | 90   |      |       |
| Lane Util. Factor          | 1.00 | 0.86  | 0.86  | 1.00 | 0.91  | 1.00  | 0.97  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Frt                        |      | 0.998 | 0.850 |      |       | 0.850 |       |      | 0.850 |      |      |       |
| Flt Protected              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (prot)          | 0    | 4544  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Flt Permitted              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (perm)          | 0    | 4544  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Right Turn on Red          |      |       | Yes   |      |       | Yes   |       |      | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |      | 3     | 137   |      |       | 316   |       |      | 14    |      |      |       |
| Link Speed (mph)           |      | 45    |       |      | 45    |       |       | 30   |       |      | 30   |       |
| Link Distance (ft)         |      | 598   |       |      | 654   |       |       | 831  |       |      | 1116 |       |
| Travel Time (s)            |      | 9.1   |       |      | 9.9   |       |       | 18.9 |       |      | 25.4 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 2505  | 404   | 0    | 1386  | 487   | 1051  | 0    | 506   | 0    | 0    | 0     |
| Shared Lane Traffic (%)    |      |       | 10%   |      |       |       |       |      |       |      |      |       |
| Lane Group Flow (vph)      | 0    | 2545  | 364   | 0    | 1386  | 487   | 1051  | 0    | 506   | 0    | 0    | 0     |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No   | No    | No   | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left | Right | Left | Left | Right |
| Median Width(ft)           |      | 24    |       |      | 24    |       |       | 24   |       |      | 24   |       |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0    |       |      | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16   |       |      | 16   |       |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |      |       |      |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |      | 9     | 15   |      | 9     |
| Number of Detectors        |      | 2     | 1     |      | 2     | 1     | 1     |      | 1     |      |      |       |
| Detector Template          |      | Thru  | Right |      | Thru  | Right | Left  |      | Right |      |      |       |
| Leading Detector (ft)      |      | 100   | 20    |      | 100   | 20    | 20    |      | 20    |      |      |       |
| Trailing Detector (ft)     |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Position(ft)    |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Size(ft)        |      | 6     | 20    |      | 6     | 20    | 20    |      | 20    |      |      |       |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |      | Cl+Ex | Cl+Ex | Cl+Ex |      | Cl+Ex |      |      |       |
| Detector 1 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 2 Position(ft)    |      | 94    |       |      | 94    |       |       |      |       |      |      |       |
| Detector 2 Size(ft)        |      | 6     |       |      | 6     |       |       |      |       |      |      |       |
| Detector 2 Type            |      | Cl+Ex |       |      | Cl+Ex |       |       |      |       |      |      |       |
| Detector 2 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |      | 0.0   |       |       |      |       |      |      |       |
| Turn Type                  |      | NA    | Perm  |      | NA    | Free  | Prot  |      | Perm  |      |      |       |
| Protected Phases           |      | 2     |       |      | 6     |       | 3     |      |       |      |      |       |
| Permitted Phases           |      |       | 2     |      |       | Free  |       |      | 3     |      |      |       |

Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

AM Year 2035  
 AM Year 2035



| Lane Group              | EBL | EBT   | EBR   | WBL | WBT   | WBR   | NBL   | NBT  | NBR   | SBL | SBT  | SBR |
|-------------------------|-----|-------|-------|-----|-------|-------|-------|------|-------|-----|------|-----|
| Detector Phase          |     | 2     | 2     |     | 6     |       | 3     |      | 3     |     |      |     |
| Switch Phase            |     |       |       |     |       |       |       |      |       |     |      |     |
| Minimum Initial (s)     |     | 5.0   | 5.0   |     | 5.0   |       | 5.0   |      | 5.0   |     |      |     |
| Minimum Split (s)       |     | 36.5  | 36.5  |     | 20.5  |       | 23.5  |      | 23.5  |     |      |     |
| Total Split (s)         |     | 74.0  | 74.0  |     | 74.0  |       | 46.0  |      | 46.0  |     |      |     |
| Total Split (%)         |     | 61.7% | 61.7% |     | 61.7% |       | 38.3% |      | 38.3% |     |      |     |
| Maximum Green (s)       |     | 69.5  | 69.5  |     | 69.5  |       | 41.5  |      | 41.5  |     |      |     |
| Yellow Time (s)         |     | 3.5   | 3.5   |     | 3.5   |       | 3.5   |      | 3.5   |     |      |     |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   |       | 1.0   |      | 1.0   |     |      |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   |       | 0.0   |      | 0.0   |     |      |     |
| Total Lost Time (s)     |     | 4.5   | 4.5   |     | 4.5   |       | 4.5   |      | 4.5   |     |      |     |
| Lead/Lag                |     |       |       |     |       |       |       |      |       |     |      |     |
| Lead-Lag Optimize?      |     |       |       |     |       |       |       |      |       |     |      |     |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   |       | 3.0   |      | 3.0   |     |      |     |
| Recall Mode             |     | C-Max | C-Max |     | C-Max |       | None  |      | None  |     |      |     |
| Walk Time (s)           |     | 7.0   | 7.0   |     |       |       |       |      |       |     |      |     |
| Flash Dont Walk (s)     |     | 25.0  | 25.0  |     |       |       |       |      |       |     |      |     |
| Pedestrian Calls (#/hr) |     | 2     | 2     |     |       |       |       |      |       |     |      |     |
| Act Effct Green (s)     |     | 69.8  | 69.8  |     | 69.8  | 120.0 | 41.2  |      | 41.2  |     |      |     |
| Actuated g/C Ratio      |     | 0.58  | 0.58  |     | 0.58  | 1.00  | 0.34  |      | 0.34  |     |      |     |
| v/c Ratio               |     | 0.96  | 0.45  |     | 0.49  | 0.32  | 0.94  |      | 0.97  |     |      |     |
| Control Delay           |     | 17.6  | 4.5   |     | 0.9   | 0.1   | 54.8  |      | 70.3  |     |      |     |
| Queue Delay             |     | 17.4  | 0.0   |     | 0.0   | 0.0   | 0.0   |      | 0.0   |     |      |     |
| Total Delay             |     | 35.0  | 4.5   |     | 1.0   | 0.1   | 54.8  |      | 70.3  |     |      |     |
| LOS                     |     | D     | A     |     | A     | A     | D     |      | E     |     |      |     |
| Approach Delay          |     | 31.2  |       |     | 0.7   |       |       | 59.8 |       |     |      |     |
| Approach LOS            |     | C     |       |     | A     |       |       | E    |       |     |      |     |
| Queue Length 50th (ft)  |     | 360   | 67    |     | 12    | 0     | 403   |      | 373   |     |      |     |
| Queue Length 95th (ft)  |     | #851  | m67   |     | m15   | m0    | #537  |      | #598  |     |      |     |
| Internal Link Dist (ft) |     | 518   |       |     | 574   |       |       | 751  |       |     | 1036 |     |
| Turn Bay Length (ft)    |     |       | 100   |     |       |       | 215   |      |       |     |      |     |
| Base Capacity (vph)     |     | 2644  | 807   |     | 2803  | 1500  | 1124  |      | 527   |     |      |     |
| Starvation Cap Reductn  |     | 64    | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Spillback Cap Reductn   |     | 191   | 0     |     | 29    | 0     | 0     |      | 0     |     |      |     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Reduced v/c Ratio       |     | 1.04  | 0.45  |     | 0.50  | 0.32  | 0.94  |      | 0.96  |     |      |     |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 9 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 29.2  
 Intersection LOS: C  
 Intersection Capacity Utilization 94.8%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

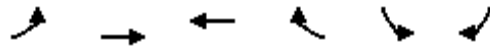
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road



Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

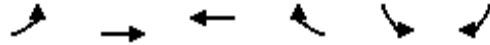
AM Year 2035  
 AM Year 2035



| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SBL   | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑↑   |       | ↓↓↓   | ↓     |
| Traffic Volume (vph)       | 0    | 1671  | 2127  | 0     | 651   | 551   |
| Future Volume (vph)        | 0    | 1671  | 2127  | 0     | 651   | 551   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 0    |       |       | 0     | 0     | 260   |
| Storage Lanes              | 0    |       |       | 0     | 2     | 1     |
| Taper Length (ft)          | 90   |       |       |       | 90    |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.91  | 1.00  | 0.97  | 0.91  |
| Frt                        |      |       |       |       | 0.968 | 0.850 |
| Flt Protected              |      |       |       |       | 0.962 |       |
| Satd. Flow (prot)          | 0    | 4818  | 4818  | 0     | 3188  | 1365  |
| Flt Permitted              |      |       |       |       | 0.962 |       |
| Satd. Flow (perm)          | 0    | 4818  | 4818  | 0     | 3188  | 1365  |
| Right Turn on Red          |      |       |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |      |       |       |       | 3     | 3     |
| Link Speed (mph)           |      | 45    | 45    |       | 30    |       |
| Link Distance (ft)         |      | 293   | 273   |       | 775   |       |
| Travel Time (s)            |      | 4.4   | 4.1   |       | 17.6  |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 0    | 1671  | 2127  | 0     | 651   | 551   |
| Shared Lane Traffic (%)    |      |       |       |       |       | 32%   |
| Lane Group Flow (vph)      | 0    | 1671  | 2127  | 0     | 827   | 375   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |
| Median Width(ft)           |      | 0     | 0     |       | 24    |       |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    | 16    |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |
| Number of Detectors        |      | 2     | 2     |       | 1     | 1     |
| Detector Template          |      | Thru  | Thru  |       | Left  | Right |
| Leading Detector (ft)      |      | 100   | 100   |       | 20    | 20    |
| Trailing Detector (ft)     |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        |      | 6     | 6     |       | 20    | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |      | 94    | 94    |       |       |       |
| Detector 2 Size(ft)        |      | 6     | 6     |       |       |       |
| Detector 2 Type            |      | Cl+Ex | Cl+Ex |       |       |       |
| Detector 2 Channel         |      |       |       |       |       |       |
| Detector 2 Extend (s)      |      | 0.0   | 0.0   |       |       |       |
| Turn Type                  |      | NA    | NA    |       | Prot  | Prot  |
| Protected Phases           |      | 4     | 8     |       | 6     | 6     |
| Permitted Phases           |      |       |       |       |       |       |

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

AM Year 2035  
 AM Year 2035



| Lane Group              | EBL | EBT   | WBT   | WBR | SBL   | SBR   |
|-------------------------|-----|-------|-------|-----|-------|-------|
| Detector Phase          |     | 4     | 8     |     | 6     | 6     |
| Switch Phase            |     |       |       |     |       |       |
| Minimum Initial (s)     |     | 6.0   | 6.0   |     | 6.0   | 6.0   |
| Minimum Split (s)       |     | 11.0  | 25.0  |     | 11.0  | 11.0  |
| Total Split (s)         |     | 30.0  | 30.0  |     | 20.0  | 20.0  |
| Total Split (%)         |     | 60.0% | 60.0% |     | 40.0% | 40.0% |
| Maximum Green (s)       |     | 25.0  | 25.0  |     | 15.0  | 15.0  |
| Yellow Time (s)         |     | 4.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     |     | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Lead/Lag                |     |       |       |     |       |       |
| Lead-Lag Optimize?      |     |       |       |     |       |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             |     | C-Max | C-Max |     | Max   | Max   |
| Walk Time (s)           |     |       | 7.0   |     |       |       |
| Flash Dont Walk (s)     |     |       | 13.0  |     |       |       |
| Pedestrian Calls (#/hr) |     |       | 2     |     |       |       |
| Act Effct Green (s)     |     | 25.0  | 25.0  |     | 15.0  | 15.0  |
| Actuated g/C Ratio      |     | 0.50  | 0.50  |     | 0.30  | 0.30  |
| v/c Ratio               |     | 0.69  | 0.88  |     | 0.86  | 0.91  |
| Control Delay           |     | 11.5  | 10.2  |     | 28.6  | 48.7  |
| Queue Delay             |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             |     | 11.5  | 10.2  |     | 28.6  | 48.7  |
| LOS                     |     | B     | B     |     | C     | D     |
| Approach Delay          |     | 11.5  | 10.2  |     | 34.9  |       |
| Approach LOS            |     | B     | B     |     | C     |       |
| Queue Length 50th (ft)  |     | 123   | 168   |     | 115   | 113   |
| Queue Length 95th (ft)  |     | 168   | m284  |     | #208  | #268  |
| Internal Link Dist (ft) |     | 213   | 193   |     | 695   |       |
| Turn Bay Length (ft)    |     |       |       |     |       | 260   |
| Base Capacity (vph)     |     | 2409  | 2409  |     | 958   | 411   |
| Starvation Cap Reductn  |     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   |     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       |     | 0.69  | 0.88  |     | 0.86  | 0.91  |

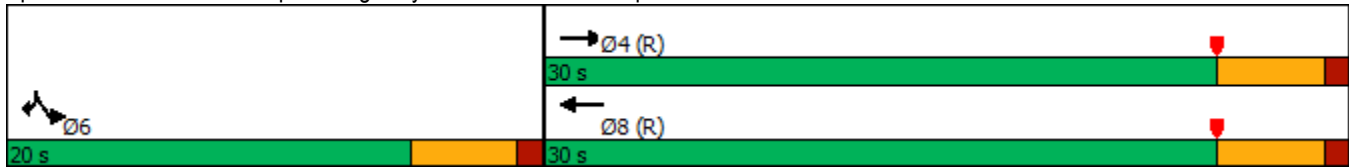
Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 43 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 16.6  
 Intersection Capacity Utilization 120.0%  
 Analysis Period (min) 15  
 Intersection LOS: B  
 ICU Level of Service H  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

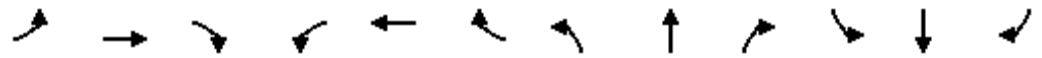
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Imperial Highway & SR-57 SB Off-Ramp



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

AM Year 2035  
 AM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT   | NBR   | SBL  | SBT  | SBR   |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|-------|
| Lane Configurations        | ↘     | ↑↑↑   |       |      | ↑↑↑   |       | ↘↘    | ↔     | ↗     |      |      | ↗↗    |
| Traffic Volume (vph)       | 113   | 1545  | 0     | 0    | 1674  | 16    | 1099  | 36    | 904   | 0    | 0    | 92    |
| Future Volume (vph)        | 113   | 1545  | 0     | 0    | 1674  | 16    | 1099  | 36    | 904   | 0    | 0    | 92    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 260   |       | 0     | 0    |       | 0     | 610   |       | 350   | 0    |      | 0     |
| Storage Lanes              | 1     |       | 0     | 0    |       | 0     | 1     |       | 1     | 0    |      | 2     |
| Taper Length (ft)          | 90    |       |       | 90   |       |       | 90    |       |       | 90   |      |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00 | 0.86  | 0.86  | 0.91  | 0.86  | 0.95  | 1.00 | 1.00 | 0.88  |
| Frt                        |       |       |       |      | 0.999 |       |       | 0.891 | 0.850 |      |      | 0.850 |
| Flt Protected              | 0.950 |       |       |      |       |       | 0.950 | 0.990 |       |      |      |       |
| Satd. Flow (prot)          | 1676  | 4818  | 0     | 0    | 6065  | 0     | 3051  | 1339  | 1425  | 0    | 0    | 2640  |
| Flt Permitted              | 0.950 |       |       |      |       |       | 0.950 | 0.990 |       |      |      |       |
| Satd. Flow (perm)          | 1676  | 4818  | 0     | 0    | 6065  | 0     | 3051  | 1339  | 1425  | 0    | 0    | 2640  |
| Right Turn on Red          |       |       | Yes   |      |       | Yes   |       |       | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |       |       |       |      | 2     |       |       | 145   | 148   |      |      | 216   |
| Link Speed (mph)           |       | 45    |       |      | 45    |       |       | 30    |       |      |      | 30    |
| Link Distance (ft)         |       | 271   |       |      | 540   |       |       | 932   |       |      |      | 494   |
| Travel Time (s)            |       | 4.1   |       |      | 8.2   |       |       | 21.2  |       |      |      | 11.2  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 113   | 1545  | 0     | 0    | 1674  | 16    | 1099  | 36    | 904   | 0    | 0    | 92    |
| Shared Lane Traffic (%)    |       |       |       |      |       |       | 10%   |       | 43%   |      |      |       |
| Lane Group Flow (vph)      | 113   | 1545  | 0     | 0    | 1690  | 0     | 989   | 535   | 515   | 0    | 0    | 92    |
| Enter Blocked Intersection | No    | No    | No    | No   | No    | No    | No    | No    | No    | No   | No   | No    |
| Lane Alignment             | Left  | Left  | Right | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right |
| Median Width(ft)           |       | 12    |       |      | 12    |       |       | 24    |       |      |      | 24    |
| Link Offset(ft)            |       | 0     |       |      | 0     |       |       | 0     |       |      |      | 0     |
| Crosswalk Width(ft)        |       | 16    |       |      | 16    |       |       | 16    |       |      |      | 16    |
| Two way Left Turn Lane     |       |       |       |      |       |       |       |       |       |      |      |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     |
| Number of Detectors        | 1     | 2     |       |      | 2     |       | 1     | 2     | 1     |      |      | 1     |
| Detector Template          | Left  | Thru  |       |      | Thru  |       | Left  | Thru  | Right |      |      | Right |
| Leading Detector (ft)      | 20    | 100   |       |      | 100   |       | 20    | 100   | 20    |      |      | 20    |
| Trailing Detector (ft)     | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       |      | 6     |       | 20    | 6     | 20    |      |      | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       |      | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |      |      | Cl+Ex |
| Detector 1 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |      | 94    |       |       | 94    |       |      |      |       |
| Detector 2 Size(ft)        |       | 6     |       |      | 6     |       |       | 6     |       |      |      |       |
| Detector 2 Type            |       | Cl+Ex |       |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |
| Detector 2 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 2 Extend (s)      |       | 0.0   |       |      | 0.0   |       |       | 0.0   |       |      |      |       |
| Turn Type                  | Prot  | NA    |       |      | NA    |       | Split | NA    | Prot  |      |      | Prot  |
| Protected Phases           | 7     | 4     |       |      | 8     |       | 2     | 2     | 2     |      |      | 1     |
| Permitted Phases           |       |       |       |      |       |       |       |       |       |      |      |       |



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

AM Year 2035  
 AM Year 2035



| Lane Group              | EBL   | EBT   | EBR | WBL | WBT   | WBR | NBL   | NBT   | NBR   | SBL | SBT | SBR   |
|-------------------------|-------|-------|-----|-----|-------|-----|-------|-------|-------|-----|-----|-------|
| Detector Phase          | 7     | 4     |     |     | 8     |     | 2     | 2     | 2     |     |     | 1     |
| Switch Phase            |       |       |     |     |       |     |       |       |       |     |     |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     |     | 6.0   |     | 6.0   | 6.0   | 6.0   |     |     | 6.0   |
| Minimum Split (s)       | 10.0  | 32.0  |     |     | 28.0  |     | 11.0  | 11.0  | 11.0  |     |     | 11.0  |
| Total Split (s)         | 12.0  | 50.0  |     |     | 38.0  |     | 39.0  | 39.0  | 39.0  |     |     | 11.0  |
| Total Split (%)         | 12.0% | 50.0% |     |     | 38.0% |     | 39.0% | 39.0% | 39.0% |     |     | 11.0% |
| Maximum Green (s)       | 8.0   | 45.0  |     |     | 33.0  |     | 34.0  | 34.0  | 34.0  |     |     | 6.0   |
| Yellow Time (s)         | 3.0   | 4.0   |     |     | 4.0   |     | 4.0   | 4.0   | 4.0   |     |     | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     |     | 1.0   |     | 1.0   | 1.0   | 1.0   |     |     | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     |     | 5.0   |     | 5.0   | 5.0   | 5.0   |     |     | 5.0   |
| Lead/Lag                | Lead  |       |     |     | Lag   |     | Lead  | Lead  | Lead  |     |     | Lag   |
| Lead-Lag Optimize?      | Yes   |       |     |     | Yes   |     | Yes   | Yes   | Yes   |     |     | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     |     | 3.0   |     | 3.0   | 3.0   | 3.0   |     |     | 3.0   |
| Recall Mode             | None  | C-Max |     |     | C-Max |     | Max   | Max   | Max   |     |     | None  |
| Walk Time (s)           |       | 7.0   |     |     | 7.0   |     |       |       |       |     |     |       |
| Flash Dont Walk (s)     |       | 20.0  |     |     | 16.0  |     |       |       |       |     |     |       |
| Pedestrian Calls (#/hr) |       | 2     |     |     | 2     |     |       |       |       |     |     |       |
| Act Effct Green (s)     | 8.2   | 47.2  |     |     | 35.0  |     | 34.0  | 34.0  | 34.0  |     |     | 6.0   |
| Actuated g/C Ratio      | 0.08  | 0.47  |     |     | 0.35  |     | 0.34  | 0.34  | 0.34  |     |     | 0.06  |
| v/c Ratio               | 0.82  | 0.68  |     |     | 0.79  |     | 0.95  | 0.97  | 0.88  |     |     | 0.25  |
| Control Delay           | 81.2  | 23.2  |     |     | 33.2  |     | 51.9  | 57.5  | 41.0  |     |     | 1.7   |
| Queue Delay             | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0   |
| Total Delay             | 81.2  | 23.2  |     |     | 33.2  |     | 51.9  | 57.5  | 41.0  |     |     | 1.7   |
| LOS                     | F     | C     |     |     | C     |     | D     | E     | D     |     |     | A     |
| Approach Delay          |       | 27.2  |     |     | 33.2  |     |       | 50.6  |       |     |     | 1.7   |
| Approach LOS            |       | C     |     |     | C     |     |       | D     |       |     |     | A     |
| Queue Length 50th (ft)  | 74    | 323   |     |     | 288   |     | 335   | 303   | 242   |     |     | 0     |
| Queue Length 95th (ft)  | m#116 | 388   |     |     | 336   |     | #476  | #565  | #455  |     |     | 0     |
| Internal Link Dist (ft) |       | 191   |     |     | 460   |     |       | 852   |       |     |     | 414   |
| Turn Bay Length (ft)    | 260   |       |     |     |       |     | 610   |       | 350   |     |     |       |
| Base Capacity (vph)     | 137   | 2274  |     |     | 2126  |     | 1037  | 550   | 582   |     |     | 361   |
| Starvation Cap Reductn  | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Storage Cap Reductn     | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Reduced v/c Ratio       | 0.82  | 0.68  |     |     | 0.79  |     | 0.95  | 0.97  | 0.88  |     |     | 0.25  |

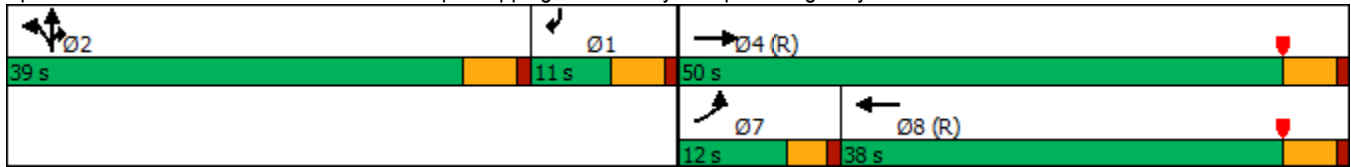
Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 80 (80%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 37.3  
 Intersection LOS: D  
 Intersection Capacity Utilization 79.2%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

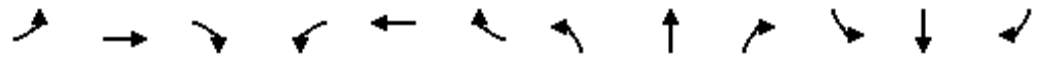
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway



Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

AM Year 2035  
AM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 227   | 2100  | 112   | 100   | 1818  | 108   | 164   | 227   | 79    | 181   | 360   | 177   |
| Future Volume (vph)        | 227   | 2100  | 112   | 100   | 1818  | 108   | 164   | 227   | 79    | 181   | 360   | 177   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 340   |       | 0     | 200   |       | 0     | 170   |       | 0     | 210   |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 1.00  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 1.00  | 1.00  |
| Frt                        |       | 0.992 |       |       | 0.992 |       |       | 0.961 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4779  | 0     | 1676  | 4779  | 0     | 3252  | 3222  | 0     | 3252  | 1765  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4779  | 0     | 1676  | 4779  | 0     | 3252  | 3222  | 0     | 3252  | 1765  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 9     |       |       | 9     |       |       | 41    |       |       |       | 177   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 540   |       |       | 1433  |       |       | 1004  |       |       |       | 3109  |
| Travel Time (s)            |       | 12.3  |       |       | 32.6  |       |       | 22.8  |       |       |       | 70.7  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 227   | 2100  | 112   | 100   | 1818  | 108   | 164   | 227   | 79    | 181   | 360   | 177   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 227   | 2212  | 0     | 100   | 1926  | 0     | 164   | 306   | 0     | 181   | 360   | 177   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 12    |       |       | 12    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

AM Year 2035  
AM Year 2035



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL  | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1    | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |      |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 37.0  |     | 10.0  | 40.0  |     | 10.0 | 41.0  | 41.0  |
| Total Split (s)         | 20.0  | 58.0  |     | 11.0  | 49.0  |     | 10.0  | 40.0  |     | 11.0 | 41.0  | 41.0  |
| Total Split (%)         | 16.7% | 48.3% |     | 9.2%  | 40.8% |     | 8.3%  | 33.3% |     | 9.2% | 34.2% | 34.2% |
| Maximum Green (s)       | 16.0  | 53.0  |     | 7.0   | 44.0  |     | 6.0   | 35.0  |     | 7.0  | 36.0  | 36.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag  | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes  | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |      | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 25.0  |     |       | 28.0  |     |      | 29.0  | 29.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |      | 2     | 2     |
| Act Effct Green (s)     | 16.0  | 53.0  |     | 7.0   | 44.0  |     | 6.0   | 35.0  |     | 7.0  | 36.0  | 36.0  |
| Actuated g/C Ratio      | 0.13  | 0.44  |     | 0.06  | 0.37  |     | 0.05  | 0.29  |     | 0.06 | 0.30  | 0.30  |
| v/c Ratio               | 1.02  | 1.05  |     | 1.03  | 1.10  |     | 1.01  | 0.32  |     | 0.96 | 0.68  | 0.31  |
| Control Delay           | 116.6 | 65.9  |     | 145.5 | 77.3  |     | 130.5 | 29.6  |     | 62.8 | 22.6  | 9.6   |
| Queue Delay             | 0.0   | 22.6  |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   |
| Total Delay             | 116.6 | 88.5  |     | 145.5 | 77.3  |     | 130.5 | 29.6  |     | 62.8 | 22.6  | 9.6   |
| LOS                     | F     | F     |     | F     | E     |     | F     | C     |     | E    | C     | A     |
| Approach Delay          |       | 91.1  |     |       | 80.6  |     |       | 64.8  |     |      | 29.6  |       |
| Approach LOS            |       | F     |     |       | F     |     |       | E     |     |      | C     |       |
| Queue Length 50th (ft)  | ~182  | ~680  |     | ~79   | ~624  |     | ~67   | 83    |     | 77   | 236   | 56    |
| Queue Length 95th (ft)  | #347  | #776  |     | m#195 | #717  |     | #141  | 124   |     | m72  | m209  | m46   |
| Internal Link Dist (ft) |       | 460   |     |       | 1353  |     |       | 924   |     |      | 3029  |       |
| Turn Bay Length (ft)    | 340   |       |     | 200   |       |     | 170   |       |     | 210  |       |       |
| Base Capacity (vph)     | 223   | 2115  |     | 97    | 1758  |     | 162   | 968   |     | 189  | 529   | 573   |
| Starvation Cap Reductn  | 0     | 251   |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Reduced v/c Ratio       | 1.02  | 1.19  |     | 1.03  | 1.10  |     | 1.01  | 0.32  |     | 0.96 | 0.68  | 0.31  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 3 (3%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.10  
 Intersection Signal Delay: 77.4 Intersection LOS: E  
 Intersection Capacity Utilization 92.9% ICU Level of Service F  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

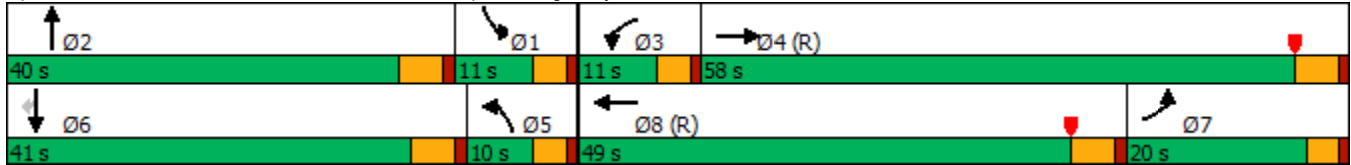
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

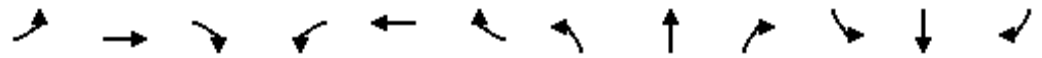
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Associated Road & Imperial Highway



Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

AM Year 2035  
 AM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↖     | ↑↑↑   | ↗     | ↖     | ↑↑↑   |       | ↖     | ↖     | ↗     | ↖     | ↗     |       |
| Traffic Volume (vph)       | 14    | 2066  | 398   | 191   | 1675  | 35    | 199   | 13    | 159   | 27    | 31    | 15    |
| Future Volume (vph)        | 14    | 2066  | 398   | 191   | 1675  | 35    | 199   | 13    | 159   | 27    | 31    | 15    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 140   |       | 200   | 225   |       | 0     | 195   |       | 0     | 85    |       | 0     |
| Storage Lanes              | 1     |       | 1     | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00  | 0.91  | 0.91  | 0.95  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       |       | 0.850 |       | 0.997 |       |       |       | 0.850 |       | 0.951 |       |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.958 |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4818  | 1500  | 1676  | 4803  | 0     | 1593  | 1606  | 1500  | 1676  | 1678  | 0     |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.958 |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4818  | 1500  | 1676  | 4803  | 0     | 1593  | 1606  | 1500  | 1676  | 1678  | 0     |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 270   |       | 4     |       |       |       | 159   |       | 15    |       |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 1433  |       |       | 3487  |       |       | 2609  |       |       | 962   |       |
| Travel Time (s)            |       | 32.6  |       |       | 79.3  |       |       | 59.3  |       |       | 21.9  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 14    | 2066  | 398   | 191   | 1675  | 35    | 199   | 13    | 159   | 27    | 31    | 15    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       | 47%   |       |       |       |       |       |
| Lane Group Flow (vph)      | 14    | 2066  | 398   | 191   | 1710  | 0     | 105   | 107   | 159   | 27    | 46    | 0     |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 12    |       |       | 12    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    |       | Split | NA    | Perm  | Split | NA    |       |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       |       |       |       | 2     |       |       |       |

Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

AM Year 2035  
 AM Year 2035



| Lane Group              | EBL  | EBT   | EBR   | WBL   | WBT   | WBR | NBL   | NBT   | NBR   | SBL  | SBT  | SBR |
|-------------------------|------|-------|-------|-------|-------|-----|-------|-------|-------|------|------|-----|
| Detector Phase          | 7    | 4     | 4     | 3     | 8     |     | 2     | 2     | 2     | 6    | 6    |     |
| Switch Phase            |      |       |       |       |       |     |       |       |       |      |      |     |
| Minimum Initial (s)     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0  | 6.0  |     |
| Minimum Split (s)       | 10.0 | 33.0  | 33.0  | 10.0  | 26.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (s)         | 10.0 | 62.0  | 62.0  | 20.0  | 72.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (%)         | 8.3% | 51.7% | 51.7% | 16.7% | 60.0% |     | 22.5% | 22.5% | 22.5% | 9.2% | 9.2% |     |
| Maximum Green (s)       | 6.0  | 57.0  | 57.0  | 16.0  | 67.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Yellow Time (s)         | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   |     | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |     |
| All-Red Time (s)        | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0  | 1.0  |     |
| Lost Time Adjust (s)    | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Lost Time (s)     | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   |     | 5.0   | 5.0   | 5.0   | 5.0  | 5.0  |     |
| Lead/Lag                | Lead | Lead  | Lead  | Lag   | Lag   |     |       |       |       |      |      |     |
| Lead-Lag Optimize?      | Yes  | Yes   | Yes   | Yes   | Yes   |     |       |       |       |      |      |     |
| Vehicle Extension (s)   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |     |
| Recall Mode             | None | C-Max | C-Max | None  | C-Max |     | Max   | Max   | Max   | Max  | Max  |     |
| Walk Time (s)           |      | 7.0   | 7.0   |       | 7.0   |     | 7.0   | 7.0   | 7.0   |      |      |     |
| Flash Dont Walk (s)     |      | 21.0  | 21.0  |       | 14.0  |     | 15.0  | 15.0  | 15.0  |      |      |     |
| Pedestrian Calls (#/hr) |      | 2     | 2     |       | 2     |     | 2     | 2     | 2     |      |      |     |
| Act Effct Green (s)     | 6.0  | 57.0  | 57.0  | 16.0  | 73.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Actuated g/C Ratio      | 0.05 | 0.48  | 0.48  | 0.13  | 0.61  |     | 0.18  | 0.18  | 0.18  | 0.05 | 0.05 |     |
| v/c Ratio               | 0.17 | 0.90  | 0.47  | 0.86  | 0.59  |     | 0.36  | 0.36  | 0.39  | 0.33 | 0.47 |     |
| Control Delay           | 81.4 | 7.3   | 0.9   | 60.0  | 3.6   |     | 47.0  | 47.0  | 9.5   | 65.8 | 56.8 |     |
| Queue Delay             | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Delay             | 81.4 | 7.3   | 0.9   | 60.0  | 3.6   |     | 47.0  | 47.0  | 9.5   | 65.8 | 56.8 |     |
| LOS                     | F    | A     | A     | E     | A     |     | D     | D     | A     | E    | E    |     |
| Approach Delay          |      | 6.7   |       |       | 9.3   |     |       | 30.9  |       |      | 60.2 |     |
| Approach LOS            |      | A     |       |       | A     |     |       | C     |       |      | E    |     |
| Queue Length 50th (ft)  | 11   | 82    | 1     | 138   | 52    |     | 75    | 76    | 0     | 21   | 24   |     |
| Queue Length 95th (ft)  | m12  | m80   | m2    | m#267 | 74    |     | 133   | 136   | 59    | 52   | 64   |     |
| Internal Link Dist (ft) |      | 1353  |       |       | 3407  |     |       | 2529  |       |      | 882  |     |
| Turn Bay Length (ft)    | 140  |       | 200   | 225   |       |     | 195   |       |       | 85   |      |     |
| Base Capacity (vph)     | 83   | 2288  | 854   | 223   | 2923  |     | 292   | 294   | 404   | 83   | 98   |     |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Spillback Cap Reductn   | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Storage Cap Reductn     | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Reduced v/c Ratio       | 0.17 | 0.90  | 0.47  | 0.86  | 0.59  |     | 0.36  | 0.36  | 0.39  | 0.33 | 0.47 |     |

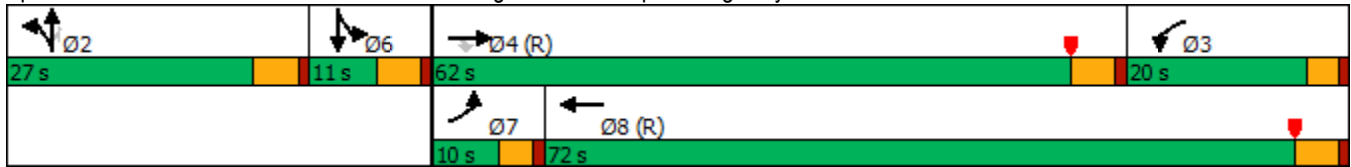
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 56 (47%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 10.4 Intersection LOS: B  
 Intersection Capacity Utilization 77.8% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Placentia Avenue/Castlegate Lane & Imperial Highway





Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

AM Year 2035  
AM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↔↔    | ↕↕↔   |       | ↔↔    | ↕↕↔   |       | ↔↔    | ↕↔    |       | ↔↔    | ↕↕    | ↔     |
| Traffic Volume (vph)       | 148   | 1441  | 263   | 77    | 1216  | 96    | 192   | 263   | 94    | 352   | 693   | 122   |
| Future Volume (vph)        | 148   | 1441  | 263   | 77    | 1216  | 96    | 192   | 263   | 94    | 352   | 693   | 122   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 185   |       | 0     | 220   |       | 0     | 150   |       | 0     | 205   |       | 0     |
| Storage Lanes              | 2     |       | 0     | 2     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 0.91  | 0.97  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.977 |       |       | 0.989 |       |       | 0.961 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4707  | 0     | 3252  | 4765  | 0     | 3252  | 3222  | 0     | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4707  | 0     | 3252  | 4765  | 0     | 3252  | 3222  | 0     | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 39    |       |       | 12    |       |       | 38    |       |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3487  |       |       | 3626  |       |       | 1318  |       |       |       | 1319  |
| Travel Time (s)            |       | 79.3  |       |       | 82.4  |       |       | 30.0  |       |       |       | 30.0  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 148   | 1441  | 263   | 77    | 1216  | 96    | 192   | 263   | 94    | 352   | 693   | 122   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 148   | 1704  | 0     | 77    | 1312  | 0     | 192   | 357   | 0     | 352   | 693   | 122   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

AM Year 2035  
AM Year 2035



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |      |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0 | 40.0  |     | 10.0  | 31.0  |     | 10.0  | 31.0  | 31.0  |
| Total Split (s)         | 14.0  | 57.0  |     | 10.0 | 53.0  |     | 14.0  | 31.0  |     | 22.0  | 39.0  | 39.0  |
| Total Split (%)         | 11.7% | 47.5% |     | 8.3% | 44.2% |     | 11.7% | 25.8% |     | 18.3% | 32.5% | 32.5% |
| Maximum Green (s)       | 10.0  | 52.0  |     | 6.0  | 48.0  |     | 10.0  | 26.0  |     | 18.0  | 34.0  | 34.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead | Lead  |     | Lag   | Lag   |     | Lead  | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |      | 28.0  |     |       | 19.0  |     |       | 19.0  | 19.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 10.0  | 54.0  |     | 6.0  | 48.0  |     | 10.0  | 27.3  |     | 16.7  | 34.0  | 34.0  |
| Actuated g/C Ratio      | 0.08  | 0.45  |     | 0.05 | 0.40  |     | 0.08  | 0.23  |     | 0.14  | 0.28  | 0.28  |
| v/c Ratio               | 0.55  | 0.80  |     | 0.48 | 0.69  |     | 0.71  | 0.47  |     | 0.78  | 0.73  | 0.23  |
| Control Delay           | 30.3  | 4.6   |     | 86.4 | 9.7   |     | 68.5  | 38.4  |     | 55.4  | 24.5  | 0.8   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 30.3  | 4.6   |     | 86.4 | 9.7   |     | 68.5  | 38.4  |     | 55.4  | 24.5  | 0.8   |
| LOS                     | C     | A     |     | F    | A     |     | E     | D     |     | E     | C     | A     |
| Approach Delay          |       | 6.7   |     |      | 14.0  |     |       | 48.9  |     |       | 31.3  |       |
| Approach LOS            |       | A     |     |      | B     |     |       | D     |     |       | C     |       |
| Queue Length 50th (ft)  | 53    | 37    |     | 30   | 61    |     | 75    | 114   |     | 97    | 152   | 0     |
| Queue Length 95th (ft)  | m60   | 86    |     | m33  | m60   |     | #124  | 163   |     | 163   | 221   | m1    |
| Internal Link Dist (ft) |       | 3407  |     |      | 3546  |     |       | 1238  |     |       | 1239  |       |
| Turn Bay Length (ft)    | 185   |       |     | 220  |       |     | 150   |       |     | 205   |       |       |
| Base Capacity (vph)     | 271   | 2139  |     | 162  | 1913  |     | 271   | 761   |     | 487   | 950   | 528   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.55  | 0.80  |     | 0.48 | 0.69  |     | 0.71  | 0.47  |     | 0.72  | 0.73  | 0.23  |

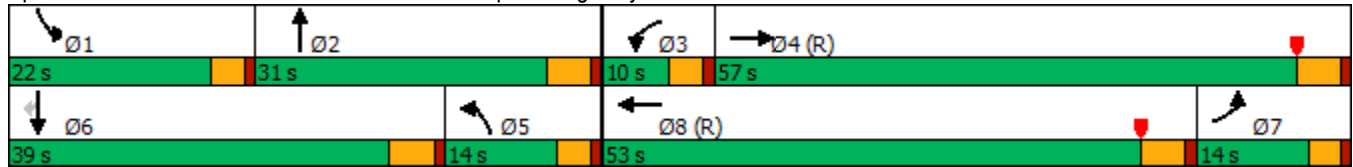
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 1 (1%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.80  
 Intersection Signal Delay: 19.2 Intersection LOS: B  
 Intersection Capacity Utilization 81.6% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Kraemer Boulevard & Imperial Highway



Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

AM Year 2035  
 AM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑    | ↔     | ↔↔    | ↑↑    | ↔     |
| Traffic Volume (vph)       | 205   | 1100  | 99    | 127   | 1706  | 158   | 144   | 201   | 129   | 299   | 314   | 214   |
| Future Volume (vph)        | 205   | 1100  | 99    | 127   | 1706  | 158   | 144   | 201   | 129   | 299   | 314   | 214   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Storage Lanes              | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 1.00  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 145   |       |       | 152   |       |       | 145   |       |       | 180   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3626  |       |       | 3640  |       |       | 1142  |       |       |       | 3502  |
| Travel Time (s)            |       | 82.4  |       |       | 82.7  |       |       | 26.0  |       |       |       | 79.6  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 205   | 1100  | 99    | 127   | 1706  | 158   | 144   | 201   | 129   | 299   | 314   | 214   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 205   | 1100  | 99    | 127   | 1706  | 158   | 144   | 201   | 129   | 299   | 314   | 214   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

AM Year 2035  
 AM Year 2035



| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     | 4     | 3     | 8     | 8     | 5     | 2     | 2     | 1     | 6     | 6     |
| Switch Phase            |       |       |       |       |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  | 38.0  | 10.0  | 40.0  | 40.0  | 10.0  | 47.0  | 47.0  | 10.0  | 49.0  | 49.0  |
| Total Split (s)         | 12.0  | 45.0  | 45.0  | 13.0  | 46.0  | 46.0  | 13.0  | 47.0  | 47.0  | 15.0  | 49.0  | 49.0  |
| Total Split (%)         | 10.0% | 37.5% | 37.5% | 10.8% | 38.3% | 38.3% | 10.8% | 39.2% | 39.2% | 12.5% | 40.8% | 40.8% |
| Maximum Green (s)       | 8.0   | 40.0  | 40.0  | 9.0   | 41.0  | 41.0  | 9.0   | 42.0  | 42.0  | 11.0  | 44.0  | 44.0  |
| Yellow Time (s)         | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max | C-Max | None  | C-Max | C-Max | None  | Max   | Max   | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   | 7.0   |       | 7.0   | 7.0   |       | 7.0   | 7.0   |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  | 26.0  |       | 28.0  | 28.0  |       | 35.0  | 35.0  |       | 37.0  | 37.0  |
| Pedestrian Calls (#/hr) |       | 2     | 2     |       | 2     | 2     |       | 2     | 2     |       | 2     | 2     |
| Act Effct Green (s)     | 8.0   | 40.0  | 40.0  | 9.0   | 41.0  | 41.0  | 8.7   | 42.0  | 42.0  | 11.0  | 44.3  | 44.3  |
| Actuated g/C Ratio      | 0.07  | 0.33  | 0.33  | 0.08  | 0.34  | 0.34  | 0.07  | 0.35  | 0.35  | 0.09  | 0.37  | 0.37  |
| v/c Ratio               | 0.95  | 0.68  | 0.17  | 0.52  | 1.04  | 0.26  | 0.61  | 0.17  | 0.21  | 1.00  | 0.25  | 0.32  |
| Control Delay           | 81.2  | 37.8  | 8.5   | 37.9  | 47.7  | 2.7   | 65.5  | 27.5  | 4.1   | 76.0  | 10.2  | 1.0   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 81.2  | 37.8  | 8.5   | 37.9  | 47.7  | 2.7   | 65.5  | 27.5  | 4.1   | 76.0  | 10.2  | 1.0   |
| LOS                     | F     | D     | A     | D     | D     | A     | E     | C     | A     | E     | B     | A     |
| Approach Delay          |       | 42.1  |       |       | 43.5  |       |       | 32.7  |       |       |       | 31.6  |
| Approach LOS            |       | D     |       |       | D     |       |       | C     |       |       |       | C     |
| Queue Length 50th (ft)  | 79    | 320   | 8     | 41    | ~254  | 3     | 56    | 56    | 0     | ~123  | 24    | 0     |
| Queue Length 95th (ft)  | m#129 | 367   | m28   | m51   | #595  | m12   | 91    | 85    | 33    | m#171 | m32   | m0    |
| Internal Link Dist (ft) |       | 3546  |       |       | 3560  |       |       | 1062  |       |       |       | 3422  |
| Turn Bay Length (ft)    | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Base Capacity (vph)     | 216   | 1606  | 596   | 243   | 1646  | 612   | 243   | 1173  | 619   | 298   | 1237  | 667   |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.95  | 0.68  | 0.17  | 0.52  | 1.04  | 0.26  | 0.59  | 0.17  | 0.21  | 1.00  | 0.25  | 0.32  |

Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 21 (18%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.04   |
| Intersection Signal Delay:         | 39.9   |
| Intersection LOS:                  | D  |
| Intersection Capacity Utilization: | 70.8%  |
| ICU Level of Service:              | C  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

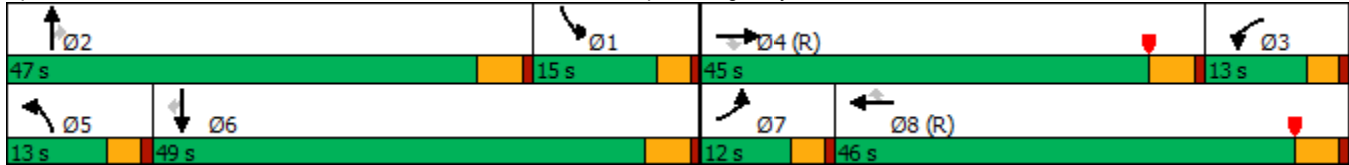
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Valencia Avenue/ Valencia Avenue & Imperial Highway



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

AM Year 2035  
AM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 38    | 1333  | 249   | 280   | 1564  | 586   | 267   | 206   | 152   | 916   | 506   | 23    |
| Future Volume (vph)        | 38    | 1333  | 249   | 280   | 1564  | 586   | 267   | 206   | 152   | 916   | 506   | 23    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.976 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4702  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4702  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 34    |       |       |       | 550   |       |       | 140   |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       |       | 1486  |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       |       | 33.8  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 38    | 1333  | 249   | 280   | 1564  | 586   | 267   | 206   | 152   | 916   | 506   | 23    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 38    | 1582  | 0     | 280   | 1564  | 586   | 267   | 206   | 152   | 916   | 506   | 23    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

AM Year 2035  
AM Year 2035



| Lane Group              | EBL  | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL    | SBT    | SBR   |
|-------------------------|------|-------|-----|-------|-------|-------|-------|-------|-------|--------|--------|-------|
| Detector Phase          | 7    | 4     |     | 3     | 8     | 8     | 5     | 2     | 2     | 1      | 6      | 6     |
| Switch Phase            |      |       |     |       |       |       |       |       |       |        |        |       |
| Minimum Initial (s)     | 6.0  | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0    | 6.0    | 6.0   |
| Minimum Split (s)       | 10.0 | 46.0  |     | 10.0  | 38.0  | 38.0  | 10.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (s)         | 10.0 | 46.0  |     | 10.0  | 46.0  | 46.0  | 16.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (%)         | 8.3% | 38.3% |     | 8.3%  | 38.3% | 38.3% | 13.3% | 45.0% | 45.0% | 8.3%   | 40.0%  | 40.0% |
| Maximum Green (s)       | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Yellow Time (s)         | 3.0  | 4.0   |     | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0    | 4.0    | 4.0   |
| All-Red Time (s)        | 1.0  | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    | 1.0    | 1.0   |
| Lost Time Adjust (s)    | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Lost Time (s)     | 4.0  | 5.0   |     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0    | 5.0    | 5.0   |
| Lead/Lag                | Lag  | Lag   |     | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead   | Lead   | Lead  |
| Lead-Lag Optimize?      | Yes  | Yes   |     | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes    | Yes    | Yes   |
| Vehicle Extension (s)   | 3.0  | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0    | 3.0    | 3.0   |
| Recall Mode             | None | C-Max |     | None  | C-Max | C-Max | None  | Max   | Max   | None   | Max    | Max   |
| Walk Time (s)           |      | 7.0   |     |       | 7.0   | 7.0   |       | 7.0   | 7.0   |        | 7.0    | 7.0   |
| Flash Dont Walk (s)     |      | 34.0  |     |       | 26.0  | 26.0  |       | 42.0  | 42.0  |        | 36.0   | 36.0  |
| Pedestrian Calls (#/hr) |      | 2     |     |       | 2     | 2     |       | 2     | 2     |        | 2      | 2     |
| Act Effct Green (s)     | 6.0  | 41.0  |     | 6.0   | 45.0  | 45.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Actuated g/C Ratio      | 0.05 | 0.34  |     | 0.05  | 0.38  | 0.38  | 0.10  | 0.41  | 0.41  | 0.05   | 0.36   | 0.36  |
| v/c Ratio               | 0.46 | 0.97  |     | 1.73  | 0.87  | 0.65  | 0.82  | 0.15  | 0.22  | 5.65   | 0.42   | 0.04  |
| Control Delay           | 39.5 | 23.1  |     | 386.0 | 41.6  | 7.3   | 73.7  | 22.8  | 5.3   | 2106.3 | 38.1   | 0.0   |
| Queue Delay             | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Delay             | 39.5 | 23.1  |     | 386.0 | 41.6  | 7.3   | 73.7  | 22.8  | 5.3   | 2106.3 | 38.1   | 0.0   |
| LOS                     | D    | C     |     | F     | D     | A     | E     | C     | A     | F      | D      | A     |
| Approach Delay          |      | 23.5  |     |       | 73.0  |       |       | 40.3  |       |        | 1348.6 |       |
| Approach LOS            |      | C     |     |       | E     |       |       | D     |       |        | F      |       |
| Queue Length 50th (ft)  | 26   | 43    |     | ~164  | 430   | 19    | 106   | 52    | 6     | ~716   | 156    | 0     |
| Queue Length 95th (ft)  | m38  | m#498 |     | #254  | #534  | 127   | #174  | 78    | 47    | m#670  | m147   | m0    |
| Internal Link Dist (ft) |      | 3560  |     |       | 1794  |       |       | 838   |       |        | 1406   |       |
| Turn Bay Length (ft)    | 220  |       |     | 230   |       | 270   | 135   |       | 100   | 185    |        | 50    |
| Base Capacity (vph)     | 83   | 1628  |     | 162   | 1806  | 906   | 325   | 1369  | 695   | 162    | 1201   | 630   |
| Starvation Cap Reductn  | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Spillback Cap Reductn   | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Storage Cap Reductn     | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Reduced v/c Ratio       | 0.46 | 0.97  |     | 1.73  | 0.87  | 0.65  | 0.82  | 0.15  | 0.22  | 5.65   | 0.42   | 0.04  |

Intersection Summary

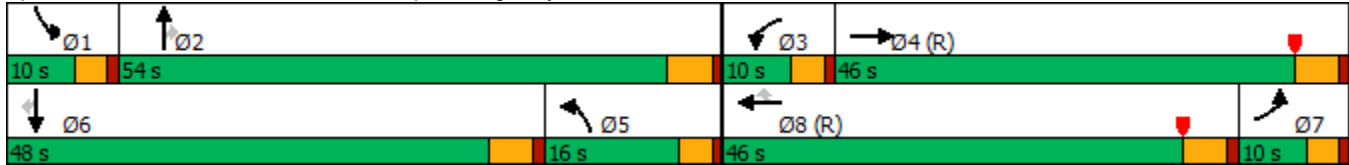
|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 82 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 5.65   |
| Intersection Signal Delay:         | 357.7  |
| Intersection LOS:                  | F  |
| Intersection Capacity Utilization: | 90.1%  |
| ICU Level of Service:              | E  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.



- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Rose Drive & Imperial Highway



Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

PM Year 2035  
 PM Year 2035



| Lane Group                 | EBL  | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR   | SBL   | SBT  | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↗↗    | ↘↘    | ↑↑↑   |       |      |      |       | ↗↗    |      | ↗↗    |
| Traffic Volume (vph)       | 0    | 1430  | 835   | 251   | 1740  | 0     | 0    | 0    | 0     | 454   | 0    | 855   |
| Future Volume (vph)        | 0    | 1430  | 835   | 251   | 1740  | 0     | 0    | 0    | 0     | 454   | 0    | 855   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  | 1800  | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 0     | 70    |       | 0     | 0    |      | 0     | 0     |      | 0     |
| Storage Lanes              | 0    |       | 2     | 2     |       | 0     | 0    |      | 0     | 2     |      | 2     |
| Taper Length (ft)          | 90   |       |       | 90    |       |       | 90   |      |       | 90    |      |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.88  | 0.97  | 0.91  | 1.00  | 1.00 | 1.00 | 1.00  | 0.97  | 1.00 | 0.88  |
| Frt                        |      |       | 0.850 |       |       |       |      |      |       |       |      | 0.850 |
| Flt Protected              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (prot)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Flt Permitted              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (perm)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Right Turn on Red          |      |       | Yes   |       |       | Yes   |      |      | Yes   |       |      | Yes   |
| Satd. Flow (RTOR)          |      |       | 835   |       |       |       |      |      |       |       |      | 55    |
| Link Speed (mph)           |      | 45    |       |       | 45    |       |      | 30   |       |       | 30   |       |
| Link Distance (ft)         |      | 453   |       |       | 598   |       |      | 824  |       |       | 1360 |       |
| Travel Time (s)            |      | 6.9   |       |       | 9.1   |       |      | 18.7 |       |       | 30.9 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1430  | 835   | 251   | 1740  | 0     | 0    | 0    | 0     | 454   | 0    | 855   |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |      |      |       |       |      |       |
| Lane Group Flow (vph)      | 0    | 1430  | 835   | 251   | 1740  | 0     | 0    | 0    | 0     | 454   | 0    | 855   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    | No   | No   | No    | No    | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right | Left  | Left | Right |
| Median Width(ft)           |      | 24    |       |       | 24    |       |      | 24   |       |       | 24   |       |
| Link Offset(ft)            |      | 0     |       |       | 0     |       |      | 0    |       |       | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |       | 16    |       |      | 16   |       |       | 16   |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |      |      |       |       |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     | 15    |      | 9     |
| Number of Detectors        |      | 2     | 1     | 1     | 2     |       |      |      |       | 1     |      | 1     |
| Detector Template          |      | Thru  | Right | Left  | Thru  |       |      |      |       | Left  |      | Right |
| Leading Detector (ft)      |      | 100   | 20    | 20    | 100   |       |      |      |       | 20    |      | 20    |
| Trailing Detector (ft)     |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Size(ft)        |      | 6     | 20    | 20    | 6     |       |      |      |       | 20    |      | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |      |      |       | Cl+Ex |      | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 2 Position(ft)    |      | 94    |       |       | 94    |       |      |      |       |       |      |       |
| Detector 2 Size(ft)        |      | 6     |       |       | 6     |       |      |      |       |       |      |       |
| Detector 2 Type            |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |       |      |       |
| Detector 2 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |       | 0.0   |       |      |      |       |       |      |       |
| Turn Type                  |      | NA    | Perm  | Prot  | NA    |       |      |      |       | Prot  |      | Prot  |
| Protected Phases           |      | 2     |       | 1     | 6     |       |      |      |       | 4     |      | 4     |
| Permitted Phases           |      | 2     |       |       |       |       |      |      |       |       |      |       |

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

PM Year 2035  
 PM Year 2035

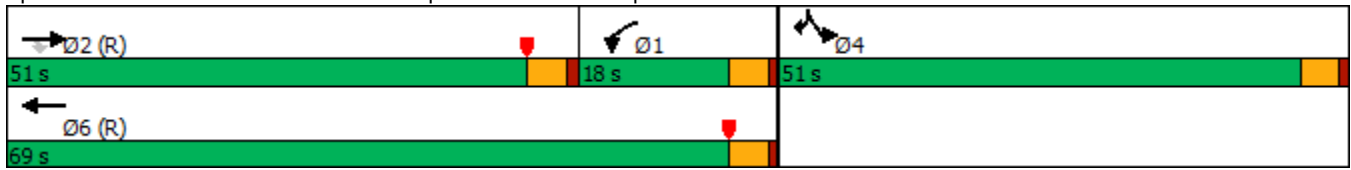


| Lane Group              | EBL | EBT   | EBR   | WBL   | WBT   | WBR | NBL | NBT | NBR | SBL   | SBT  | SBR   |
|-------------------------|-----|-------|-------|-------|-------|-----|-----|-----|-----|-------|------|-------|
| Detector Phase          |     | 2     | 2     | 1     | 6     |     |     |     |     | 4     |      | 4     |
| Switch Phase            |     |       |       |       |       |     |     |     |     |       |      |       |
| Minimum Initial (s)     |     | 5.0   | 5.0   | 5.0   | 5.0   |     |     |     |     | 5.0   |      | 5.0   |
| Minimum Split (s)       |     | 20.5  | 20.5  | 9.5   | 31.5  |     |     |     |     | 9.5   |      | 9.5   |
| Total Split (s)         |     | 51.0  | 51.0  | 18.0  | 69.0  |     |     |     |     | 51.0  |      | 51.0  |
| Total Split (%)         |     | 42.5% | 42.5% | 15.0% | 57.5% |     |     |     |     | 42.5% |      | 42.5% |
| Maximum Green (s)       |     | 46.5  | 46.5  | 13.5  | 64.5  |     |     |     |     | 46.5  |      | 46.5  |
| Yellow Time (s)         |     | 3.5   | 3.5   | 3.5   | 3.5   |     |     |     |     | 3.5   |      | 3.5   |
| All-Red Time (s)        |     | 1.0   | 1.0   | 1.0   | 1.0   |     |     |     |     | 1.0   |      | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |     |     |     | 0.0   |      | 0.0   |
| Total Lost Time (s)     |     | 4.5   | 4.5   | 4.5   | 4.5   |     |     |     |     | 4.5   |      | 4.5   |
| Lead/Lag                |     | Lead  | Lead  | Lag   |       |     |     |     |     |       |      |       |
| Lead-Lag Optimize?      |     | Yes   | Yes   | Yes   |       |     |     |     |     |       |      |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   | 3.0   | 3.0   |     |     |     |     | 3.0   |      | 3.0   |
| Recall Mode             |     | C-Max | C-Max | None  | C-Max |     |     |     |     | None  |      | None  |
| Walk Time (s)           |     | 7.0   | 7.0   |       | 7.0   |     |     |     |     |       |      |       |
| Flash Dont Walk (s)     |     | 9.0   | 9.0   |       | 20.0  |     |     |     |     |       |      |       |
| Pedestrian Calls (#/hr) |     | 2     | 2     |       | 2     |     |     |     |     |       |      |       |
| Act Effct Green (s)     |     | 50.6  | 50.6  | 13.5  | 68.6  |     |     |     |     | 42.4  |      | 42.4  |
| Actuated g/C Ratio      |     | 0.42  | 0.42  | 0.11  | 0.57  |     |     |     |     | 0.35  |      | 0.35  |
| v/c Ratio               |     | 0.70  | 0.52  | 0.69  | 0.63  |     |     |     |     | 0.40  |      | 0.88  |
| Control Delay           |     | 20.1  | 2.0   | 60.4  | 19.1  |     |     |     |     | 29.7  |      | 45.3  |
| Queue Delay             |     | 0.6   | 0.4   | 0.0   | 0.2   |     |     |     |     | 0.0   |      | 0.0   |
| Total Delay             |     | 20.8  | 2.4   | 60.4  | 19.3  |     |     |     |     | 29.7  |      | 45.3  |
| LOS                     |     | C     | A     | E     | B     |     |     |     |     | C     |      | D     |
| Approach Delay          |     | 14.0  |       |       | 24.5  |     |     |     |     |       |      | 39.9  |
| Approach LOS            |     | B     |       |       | C     |     |     |     |     |       |      | D     |
| Queue Length 50th (ft)  |     | 150   | 22    | 97    | 282   |     |     |     |     | 131   |      | 323   |
| Queue Length 95th (ft)  |     | m173  | m26   | 143   | 352   |     |     |     |     | 170   |      | 406   |
| Internal Link Dist (ft) |     | 373   |       |       | 518   |     |     | 744 |     |       | 1280 |       |
| Turn Bay Length (ft)    |     |       |       | 70    |       |     |     |     |     |       |      |       |
| Base Capacity (vph)     |     | 2030  | 1595  | 365   | 2753  |     |     |     |     | 1260  |      | 1056  |
| Starvation Cap Reductn  |     | 260   | 311   | 0     | 278   |     |     |     |     | 0     |      | 0     |
| Spillback Cap Reductn   |     | 0     | 0     | 0     | 36    |     |     |     |     | 0     |      | 0     |
| Storage Cap Reductn     |     | 0     | 0     | 0     | 0     |     |     |     |     | 0     |      | 0     |
| Reduced v/c Ratio       |     | 0.81  | 0.65  | 0.69  | 0.70  |     |     |     |     | 0.36  |      | 0.81  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 112 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 23.8  
 Intersection LOS: C  
 Intersection Capacity Utilization 74.6%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road



Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

PM Year 2035  
 PM Year 2035



| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT  | NBR   | SBL  | SBT  | SBR   |
|----------------------------|------|-------|-------|------|-------|-------|-------|------|-------|------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑     |      | ↑↑↑   | ↑     | ↑↑    |      | ↑     |      |      |       |
| Traffic Volume (vph)       | 0    | 1528  | 576   | 0    | 1137  | 523   | 676   | 0    | 301   | 0    | 0    | 0     |
| Future Volume (vph)        | 0    | 1528  | 576   | 0    | 1137  | 523   | 676   | 0    | 301   | 0    | 0    | 0     |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800 | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 100   | 0    |       | 0     | 215   |      | 0     | 0    |      | 0     |
| Storage Lanes              | 0    |       | 1     | 0    |       | 1     | 1     |      | 1     | 0    |      | 0     |
| Taper Length (ft)          | 90   |       |       | 90   |       |       | 90    |      |       | 90   |      |       |
| Lane Util. Factor          | 1.00 | 0.86  | 0.86  | 1.00 | 0.91  | 1.00  | 0.97  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Frt                        |      | 0.990 | 0.850 |      |       | 0.850 |       |      | 0.850 |      |      |       |
| Flt Protected              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (prot)          | 0    | 4507  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Flt Permitted              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (perm)          | 0    | 4507  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Right Turn on Red          |      |       | Yes   |      |       | Yes   |       |      | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |      | 14    | 299   |      |       | 415   |       |      | 26    |      |      |       |
| Link Speed (mph)           |      | 45    |       |      | 45    |       |       | 30   |       |      | 30   |       |
| Link Distance (ft)         |      | 598   |       |      | 654   |       |       | 831  |       |      | 1116 |       |
| Travel Time (s)            |      | 9.1   |       |      | 9.9   |       |       | 18.9 |       |      | 25.4 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1528  | 576   | 0    | 1137  | 523   | 676   | 0    | 301   | 0    | 0    | 0     |
| Shared Lane Traffic (%)    |      |       | 19%   |      |       |       |       |      |       |      |      |       |
| Lane Group Flow (vph)      | 0    | 1637  | 467   | 0    | 1137  | 523   | 676   | 0    | 301   | 0    | 0    | 0     |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No   | No    | No   | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left | Right | Left | Left | Right |
| Median Width(ft)           |      | 24    |       |      | 24    |       |       | 24   |       |      | 24   |       |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0    |       |      | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16   |       |      | 16   |       |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |      |       |      |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |      | 9     | 15   |      | 9     |
| Number of Detectors        |      | 2     | 1     |      | 2     | 1     | 1     |      | 1     |      |      |       |
| Detector Template          |      | Thru  | Right |      | Thru  | Right | Left  |      | Right |      |      |       |
| Leading Detector (ft)      |      | 100   | 20    |      | 100   | 20    | 20    |      | 20    |      |      |       |
| Trailing Detector (ft)     |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Position(ft)    |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Size(ft)        |      | 6     | 20    |      | 6     | 20    | 20    |      | 20    |      |      |       |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |      | Cl+Ex | Cl+Ex | Cl+Ex |      | Cl+Ex |      |      |       |
| Detector 1 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 2 Position(ft)    |      | 94    |       |      | 94    |       |       |      |       |      |      |       |
| Detector 2 Size(ft)        |      | 6     |       |      | 6     |       |       |      |       |      |      |       |
| Detector 2 Type            |      | Cl+Ex |       |      | Cl+Ex |       |       |      |       |      |      |       |
| Detector 2 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |      | 0.0   |       |       |      |       |      |      |       |
| Turn Type                  |      | NA    | Perm  |      | NA    | Free  | Prot  |      | Perm  |      |      |       |
| Protected Phases           |      | 2     |       |      | 6     |       | 3     |      |       |      |      |       |
| Permitted Phases           |      |       | 2     |      |       | Free  |       |      | 3     |      |      |       |

Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

PM Year 2035  
 PM Year 2035

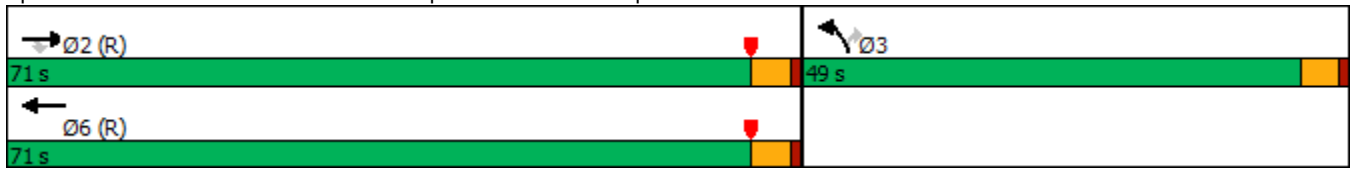


| Lane Group              | EBL | EBT   | EBR   | WBL | WBT   | WBR   | NBL   | NBT  | NBR   | SBL | SBT  | SBR |
|-------------------------|-----|-------|-------|-----|-------|-------|-------|------|-------|-----|------|-----|
| Detector Phase          |     | 2     | 2     |     | 6     |       | 3     |      | 3     |     |      |     |
| Switch Phase            |     |       |       |     |       |       |       |      |       |     |      |     |
| Minimum Initial (s)     |     | 5.0   | 5.0   |     | 5.0   |       | 5.0   |      | 5.0   |     |      |     |
| Minimum Split (s)       |     | 36.5  | 36.5  |     | 20.5  |       | 23.5  |      | 23.5  |     |      |     |
| Total Split (s)         |     | 71.0  | 71.0  |     | 71.0  |       | 49.0  |      | 49.0  |     |      |     |
| Total Split (%)         |     | 59.2% | 59.2% |     | 59.2% |       | 40.8% |      | 40.8% |     |      |     |
| Maximum Green (s)       |     | 66.5  | 66.5  |     | 66.5  |       | 44.5  |      | 44.5  |     |      |     |
| Yellow Time (s)         |     | 3.5   | 3.5   |     | 3.5   |       | 3.5   |      | 3.5   |     |      |     |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   |       | 1.0   |      | 1.0   |     |      |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   |       | 0.0   |      | 0.0   |     |      |     |
| Total Lost Time (s)     |     | 4.5   | 4.5   |     | 4.5   |       | 4.5   |      | 4.5   |     |      |     |
| Lead/Lag                |     |       |       |     |       |       |       |      |       |     |      |     |
| Lead-Lag Optimize?      |     |       |       |     |       |       |       |      |       |     |      |     |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   |       | 3.0   |      | 3.0   |     |      |     |
| Recall Mode             |     | C-Max | C-Max |     | C-Max |       | None  |      | None  |     |      |     |
| Walk Time (s)           |     | 7.0   | 7.0   |     |       |       |       |      |       |     |      |     |
| Flash Dont Walk (s)     |     | 25.0  | 25.0  |     |       |       |       |      |       |     |      |     |
| Pedestrian Calls (#/hr) |     | 2     | 2     |     |       |       |       |      |       |     |      |     |
| Act Effct Green (s)     |     | 79.2  | 79.2  |     | 79.2  | 120.0 | 31.8  |      | 31.8  |     |      |     |
| Actuated g/C Ratio      |     | 0.66  | 0.66  |     | 0.66  | 1.00  | 0.26  |      | 0.26  |     |      |     |
| v/c Ratio               |     | 0.55  | 0.49  |     | 0.36  | 0.35  | 0.78  |      | 0.72  |     |      |     |
| Control Delay           |     | 6.2   | 3.7   |     | 3.0   | 0.5   | 47.4  |      | 46.2  |     |      |     |
| Queue Delay             |     | 0.2   | 0.3   |     | 0.0   | 0.0   | 0.0   |      | 0.0   |     |      |     |
| Total Delay             |     | 6.4   | 4.0   |     | 3.0   | 0.5   | 47.4  |      | 46.2  |     |      |     |
| LOS                     |     | A     | A     |     | A     | A     | D     |      | D     |     |      |     |
| Approach Delay          |     | 5.9   |       |     | 2.2   |       |       | 47.0 |       |     |      |     |
| Approach LOS            |     | A     |       |     | A     |       |       | D    |       |     |      |     |
| Queue Length 50th (ft)  |     | 120   | 37    |     | 41    | 0     | 252   |      | 196   |     |      |     |
| Queue Length 95th (ft)  |     | 146   | 61    |     | 66    | 0     | 290   |      | 272   |     |      |     |
| Internal Link Dist (ft) |     | 518   |       |     | 574   |       |       | 751  |       |     | 1036 |     |
| Turn Bay Length (ft)    |     |       | 100   |     |       |       | 215   |      |       |     |      |     |
| Base Capacity (vph)     |     | 2978  | 952   |     | 3179  | 1500  | 1205  |      | 572   |     |      |     |
| Starvation Cap Reductn  |     | 419   | 133   |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Spillback Cap Reductn   |     | 92    | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Reduced v/c Ratio       |     | 0.64  | 0.57  |     | 0.36  | 0.35  | 0.56  |      | 0.53  |     |      |     |

Intersection Summary

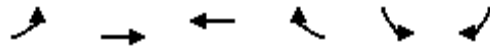
|                                    |   |
|------------------------------------|---|
| Area Type:                         | Other   |
| Cycle Length:                      | 120   |
| Actuated Cycle Length:             | 120   |
| Offset:                            | 10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow |
| Natural Cycle:                     | 60  |
| Control Type:                      | Actuated-Coordinated  |
| Maximum v/c Ratio:                 | 0.78  |
| Intersection Signal Delay:         | 13.1  |
| Intersection Capacity Utilization: | 63.1%   |
| Analysis Period (min):             | 15  |
| Intersection LOS:                  | B   |
| ICU Level of Service:              | B   |

Splits and Phases: 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road



Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

PM Year 2035  
 PM Year 2035

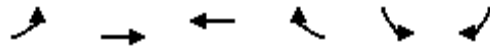


| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SBL   | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑↑   |       | ↓↓↓   | ↓     |
| Traffic Volume (vph)       | 0    | 1898  | 2623  | 0     | 730   | 605   |
| Future Volume (vph)        | 0    | 1898  | 2623  | 0     | 730   | 605   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 0    |       |       | 0     | 0     | 260   |
| Storage Lanes              | 0    |       |       | 0     | 2     | 1     |
| Taper Length (ft)          | 90   |       |       |       | 90    |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.91  | 1.00  | 0.97  | 0.91  |
| Frt                        |      |       |       |       | 0.969 | 0.850 |
| Flt Protected              |      |       |       |       | 0.962 |       |
| Satd. Flow (prot)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Flt Permitted              |      |       |       |       | 0.962 |       |
| Satd. Flow (perm)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Right Turn on Red          |      |       |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |      |       |       |       | 2     | 2     |
| Link Speed (mph)           |      | 45    | 45    |       | 30    |       |
| Link Distance (ft)         |      | 293   | 273   |       | 775   |       |
| Travel Time (s)            |      | 4.4   | 4.1   |       | 17.6  |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 0    | 1898  | 2623  | 0     | 730   | 605   |
| Shared Lane Traffic (%)    |      |       |       |       |       | 31%   |
| Lane Group Flow (vph)      | 0    | 1898  | 2623  | 0     | 918   | 417   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |
| Median Width(ft)           |      | 0     | 0     |       | 24    |       |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    | 16    |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |
| Number of Detectors        |      | 2     | 2     |       | 1     | 1     |
| Detector Template          |      | Thru  | Thru  |       | Left  | Right |
| Leading Detector (ft)      |      | 100   | 100   |       | 20    | 20    |
| Trailing Detector (ft)     |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        |      | 6     | 6     |       | 20    | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |      | 94    | 94    |       |       |       |
| Detector 2 Size(ft)        |      | 6     | 6     |       |       |       |
| Detector 2 Type            |      | Cl+Ex | Cl+Ex |       |       |       |
| Detector 2 Channel         |      |       |       |       |       |       |
| Detector 2 Extend (s)      |      | 0.0   | 0.0   |       |       |       |
| Turn Type                  |      | NA    | NA    |       | Prot  | Prot  |
| Protected Phases           |      | 4     | 8     |       | 6     | 6     |
| Permitted Phases           |      |       |       |       |       |       |



Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

PM Year 2035  
 PM Year 2035



| Lane Group              | EBL | EBT   | WBT   | WBR | SBL   | SBR   |
|-------------------------|-----|-------|-------|-----|-------|-------|
| Detector Phase          |     | 4     | 8     |     | 6     | 6     |
| Switch Phase            |     |       |       |     |       |       |
| Minimum Initial (s)     |     | 6.0   | 6.0   |     | 6.0   | 6.0   |
| Minimum Split (s)       |     | 11.0  | 25.0  |     | 11.0  | 11.0  |
| Total Split (s)         |     | 39.0  | 39.0  |     | 21.0  | 21.0  |
| Total Split (%)         |     | 65.0% | 65.0% |     | 35.0% | 35.0% |
| Maximum Green (s)       |     | 34.0  | 34.0  |     | 16.0  | 16.0  |
| Yellow Time (s)         |     | 4.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     |     | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Lead/Lag                |     |       |       |     |       |       |
| Lead-Lag Optimize?      |     |       |       |     |       |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             |     | C-Max | C-Max |     | Max   | Max   |
| Walk Time (s)           |     |       | 7.0   |     |       |       |
| Flash Dont Walk (s)     |     |       | 13.0  |     |       |       |
| Pedestrian Calls (#/hr) |     |       | 2     |     |       |       |
| Act Effct Green (s)     |     | 34.0  | 34.0  |     | 16.0  | 16.0  |
| Actuated g/C Ratio      |     | 0.57  | 0.57  |     | 0.27  | 0.27  |
| v/c Ratio               |     | 0.70  | 0.96  |     | 1.08  | 1.14  |
| Control Delay           |     | 11.0  | 14.5  |     | 78.7  | 117.6 |
| Queue Delay             |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             |     | 11.0  | 14.5  |     | 78.7  | 117.6 |
| LOS                     |     | B     | B     |     | E     | F     |
| Approach Delay          |     | 11.0  | 14.5  |     | 90.8  |       |
| Approach LOS            |     | B     | B     |     | F     |       |
| Queue Length 50th (ft)  |     | 159   | 309   |     | ~197  | ~201  |
| Queue Length 95th (ft)  |     | 207   | m288  |     | #304  | #371  |
| Internal Link Dist (ft) |     | 213   | 193   |     | 695   |       |
| Turn Bay Length (ft)    |     |       |       |     |       | 260   |
| Base Capacity (vph)     |     | 2730  | 2730  |     | 852   | 365   |
| Starvation Cap Reductn  |     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   |     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       |     | 0.70  | 0.96  |     | 1.08  | 1.14  |

Intersection Summary

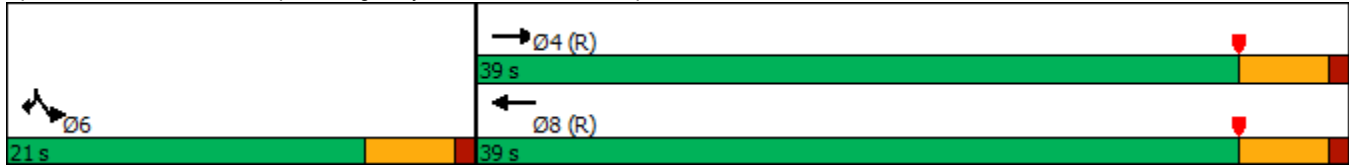
Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 9 (15%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.14  
 Intersection Signal Delay: 30.8  
 Intersection Capacity Utilization 143.2%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service H  
 ~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

PM Year 2035  
 PM Year 2035

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Imperial Highway & SR-57 SB Off-Ramp



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

PM Year 2035  
 PM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT   | NBR   | SBL  | SBT  | SBR   |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|-------|
| Lane Configurations        | ↘     | ↑↑↑   |       |      | ↑↑↑   |       | ↘↘    | ↔     | ↘     |      |      | ↘↘    |
| Traffic Volume (vph)       | 205   | 2041  | 0     | 0    | 2686  | 43    | 1110  | 72    | 482   | 0    | 0    | 217   |
| Future Volume (vph)        | 205   | 2041  | 0     | 0    | 2686  | 43    | 1110  | 72    | 482   | 0    | 0    | 217   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 260   |       | 0     | 0    |       | 0     | 610   |       | 350   | 0    |      | 0     |
| Storage Lanes              | 1     |       | 0     | 0    |       | 0     | 1     |       | 1     | 0    |      | 2     |
| Taper Length (ft)          | 90    |       |       | 90   |       |       | 90    |       |       | 90   |      |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00 | 0.86  | 0.86  | 0.91  | 0.86  | 0.95  | 1.00 | 1.00 | 0.88  |
| Frt                        |       |       |       |      | 0.998 |       |       | 0.966 | 0.850 |      |      | 0.850 |
| Flt Protected              | 0.950 |       |       |      |       |       | 0.950 | 0.971 |       |      |      |       |
| Satd. Flow (prot)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1424  | 1425  | 0    | 0    | 2640  |
| Flt Permitted              | 0.950 |       |       |      |       |       | 0.950 | 0.971 |       |      |      |       |
| Satd. Flow (perm)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1424  | 1425  | 0    | 0    | 2640  |
| Right Turn on Red          |       |       | Yes   |      |       | Yes   |       |       | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |       |       |       |      | 3     |       |       | 12    | 101   |      |      | 245   |
| Link Speed (mph)           |       | 45    |       |      | 45    |       |       | 30    |       |      |      | 30    |
| Link Distance (ft)         |       | 271   |       |      | 540   |       |       | 932   |       |      |      | 494   |
| Travel Time (s)            |       | 4.1   |       |      | 8.2   |       |       | 21.2  |       |      |      | 11.2  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 205   | 2041  | 0     | 0    | 2686  | 43    | 1110  | 72    | 482   | 0    | 0    | 217   |
| Shared Lane Traffic (%)    |       |       |       |      |       |       | 23%   |       | 20%   |      |      |       |
| Lane Group Flow (vph)      | 205   | 2041  | 0     | 0    | 2729  | 0     | 855   | 423   | 386   | 0    | 0    | 217   |
| Enter Blocked Intersection | No    | No    | No    | No   | No    | No    | No    | No    | No    | No   | No   | No    |
| Lane Alignment             | Left  | Left  | Right | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right |
| Median Width(ft)           |       | 12    |       |      | 12    |       |       | 24    |       |      |      | 24    |
| Link Offset(ft)            |       | 0     |       |      | 0     |       |       | 0     |       |      |      | 0     |
| Crosswalk Width(ft)        |       | 16    |       |      | 16    |       |       | 16    |       |      |      | 16    |
| Two way Left Turn Lane     |       |       |       |      |       |       |       |       |       |      |      |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     |
| Number of Detectors        | 1     | 2     |       |      | 2     |       | 1     | 2     | 1     |      |      | 1     |
| Detector Template          | Left  | Thru  |       |      | Thru  |       | Left  | Thru  | Right |      |      | Right |
| Leading Detector (ft)      | 20    | 100   |       |      | 100   |       | 20    | 100   | 20    |      |      | 20    |
| Trailing Detector (ft)     | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       |      | 6     |       | 20    | 6     | 20    |      |      | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       |      | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |      |      | Cl+Ex |
| Detector 1 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |      | 94    |       |       | 94    |       |      |      |       |
| Detector 2 Size(ft)        |       | 6     |       |      | 6     |       |       | 6     |       |      |      |       |
| Detector 2 Type            |       | Cl+Ex |       |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |
| Detector 2 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 2 Extend (s)      |       | 0.0   |       |      | 0.0   |       |       | 0.0   |       |      |      |       |
| Turn Type                  | Prot  | NA    |       |      | NA    |       | Split | NA    | Prot  |      |      | Prot  |
| Protected Phases           | 7     | 4     |       |      | 8     |       | 2     | 2     | 2     |      |      | 1     |
| Permitted Phases           |       |       |       |      |       |       |       |       |       |      |      |       |

Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

PM Year 2035  
 PM Year 2035



| Lane Group              | EBL   | EBT   | EBR | WBL | WBT   | WBR | NBL   | NBT   | NBR   | SBL | SBT | SBR  |
|-------------------------|-------|-------|-----|-----|-------|-----|-------|-------|-------|-----|-----|------|
| Detector Phase          | 7     | 4     |     |     | 8     |     | 2     | 2     | 2     |     |     | 1    |
| Switch Phase            |       |       |     |     |       |     |       |       |       |     |     |      |
| Minimum Initial (s)     | 6.0   | 6.0   |     |     | 6.0   |     | 6.0   | 6.0   | 6.0   |     |     | 6.0  |
| Minimum Split (s)       | 10.0  | 32.0  |     |     | 28.0  |     | 11.0  | 11.0  | 11.0  |     |     | 11.0 |
| Total Split (s)         | 16.0  | 72.0  |     |     | 56.0  |     | 37.0  | 37.0  | 37.0  |     |     | 11.0 |
| Total Split (%)         | 13.3% | 60.0% |     |     | 46.7% |     | 30.8% | 30.8% | 30.8% |     |     | 9.2% |
| Maximum Green (s)       | 12.0  | 67.0  |     |     | 51.0  |     | 32.0  | 32.0  | 32.0  |     |     | 6.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     |     | 4.0   |     | 4.0   | 4.0   | 4.0   |     |     | 4.0  |
| All-Red Time (s)        | 1.0   | 1.0   |     |     | 1.0   |     | 1.0   | 1.0   | 1.0   |     |     | 1.0  |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0  |
| Total Lost Time (s)     | 4.0   | 5.0   |     |     | 5.0   |     | 5.0   | 5.0   | 5.0   |     |     | 5.0  |
| Lead/Lag                | Lead  |       |     |     | Lag   |     | Lag   | Lag   | Lag   |     |     | Lead |
| Lead-Lag Optimize?      | Yes   |       |     |     | Yes   |     | Yes   | Yes   | Yes   |     |     | Yes  |
| Vehicle Extension (s)   | 3.0   | 3.0   |     |     | 3.0   |     | 3.0   | 3.0   | 3.0   |     |     | 3.0  |
| Recall Mode             | None  | C-Max |     |     | C-Max |     | Max   | Max   | Max   |     |     | None |
| Walk Time (s)           |       | 7.0   |     |     | 7.0   |     |       |       |       |     |     |      |
| Flash Dont Walk (s)     |       | 20.0  |     |     | 16.0  |     |       |       |       |     |     |      |
| Pedestrian Calls (#/hr) |       | 2     |     |     | 2     |     |       |       |       |     |     |      |
| Act Effct Green (s)     | 12.0  | 67.0  |     |     | 51.0  |     | 32.0  | 32.0  | 32.0  |     |     | 6.0  |
| Actuated g/C Ratio      | 0.10  | 0.56  |     |     | 0.42  |     | 0.27  | 0.27  | 0.27  |     |     | 0.05 |
| v/c Ratio               | 1.23  | 0.76  |     |     | 1.06  |     | 1.05  | 1.09  | 0.85  |     |     | 0.60 |
| Control Delay           | 171.1 | 19.3  |     |     | 38.9  |     | 88.7  | 112.8 | 49.2  |     |     | 11.6 |
| Queue Delay             | 0.0   | 47.7  |     |     | 16.1  |     | 0.0   | 2.2   | 2.4   |     |     | 0.0  |
| Total Delay             | 171.1 | 67.0  |     |     | 55.0  |     | 88.7  | 115.0 | 51.5  |     |     | 11.6 |
| LOS                     | F     | E     |     |     | D     |     | F     | F     | D     |     |     | B    |
| Approach Delay          |       | 76.5  |     |     | 55.0  |     |       | 86.8  |       |     |     | 11.6 |
| Approach LOS            |       | E     |     |     | D     |     |       | F     |       |     |     | B    |
| Queue Length 50th (ft)  | ~196  | 394   |     |     | ~652  |     | ~396  | ~420  | 228   |     |     | 0    |
| Queue Length 95th (ft)  | m#293 | m436  |     |     | m134  |     | #530  | #658  | #411  |     |     | 30   |
| Internal Link Dist (ft) |       | 191   |     |     | 460   |     |       | 852   |       |     |     | 414  |
| Turn Bay Length (ft)    | 260   |       |     |     |       |     | 610   |       | 350   |     |     |      |
| Base Capacity (vph)     | 167   | 2690  |     |     | 2576  |     | 813   | 388   | 454   |     |     | 364  |
| Starvation Cap Reductn  | 0     | 0     |     |     | 89    |     | 0     | 0     | 0     |     |     | 0    |
| Spillback Cap Reductn   | 0     | 1011  |     |     | 0     |     | 0     | 2     | 20    |     |     | 0    |
| Storage Cap Reductn     | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0    |
| Reduced v/c Ratio       | 1.23  | 1.22  |     |     | 1.10  |     | 1.05  | 1.10  | 0.89  |     |     | 0.60 |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 12 (10%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.23  
 Intersection Signal Delay: 68.4  
 Intersection Capacity Utilization 91.9%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service F

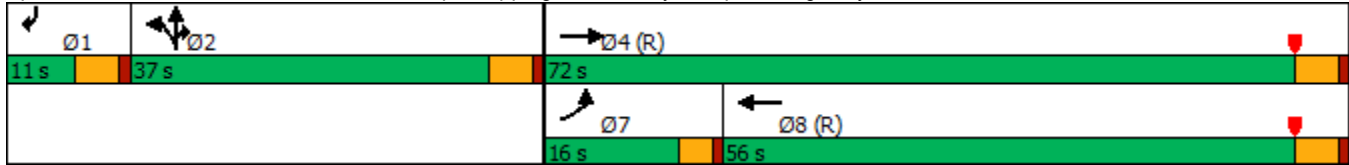
~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

PM Year 2035  
 PM Year 2035

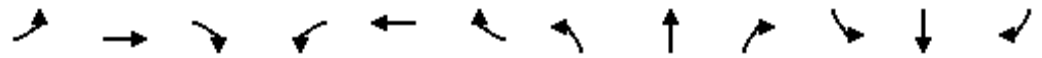
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway



Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

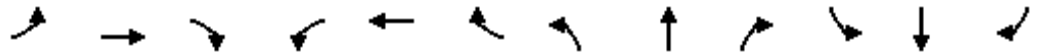
PM Year 2035  
PM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 296   | 2073  | 153   | 191   | 1967  | 203   | 240   | 282   | 92    | 320   | 380   | 280   |
| Future Volume (vph)        | 296   | 2073  | 153   | 191   | 1967  | 203   | 240   | 282   | 92    | 320   | 380   | 280   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 340   |       | 0     | 200   |       | 0     | 170   |       | 0     | 210   |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 1.00  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 1.00  | 1.00  |
| Frt                        |       | 0.990 |       |       | 0.986 |       |       | 0.963 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4769  | 0     | 1676  | 4750  | 0     | 3252  | 3229  | 0     | 3252  | 1765  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4769  | 0     | 1676  | 4750  | 0     | 3252  | 3229  | 0     | 3252  | 1765  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 12    |       |       | 16    |       |       | 37    |       |       |       | 234   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 540   |       |       | 1433  |       |       | 1004  |       |       |       | 3109  |
| Travel Time (s)            |       | 12.3  |       |       | 32.6  |       |       | 22.8  |       |       |       | 70.7  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 296   | 2073  | 153   | 191   | 1967  | 203   | 240   | 282   | 92    | 320   | 380   | 280   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 296   | 2226  | 0     | 191   | 2170  | 0     | 240   | 374   | 0     | 320   | 380   | 280   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 12    |       |       | 12    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

PM Year 2035  
PM Year 2035



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 37.0  |     | 10.0  | 40.0  |     | 10.0  | 41.0  | 41.0  |
| Total Split (s)         | 18.0  | 53.0  |     | 14.0  | 49.0  |     | 12.0  | 40.0  |     | 13.0  | 41.0  | 41.0  |
| Total Split (%)         | 15.0% | 44.2% |     | 11.7% | 40.8% |     | 10.0% | 33.3% |     | 10.8% | 34.2% | 34.2% |
| Maximum Green (s)       | 14.0  | 48.0  |     | 10.0  | 44.0  |     | 8.0   | 35.0  |     | 9.0   | 36.0  | 36.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 25.0  |     |       | 28.0  |     |       | 29.0  | 29.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 14.0  | 48.0  |     | 10.0  | 44.0  |     | 8.0   | 35.0  |     | 9.0   | 36.0  | 36.0  |
| Actuated g/C Ratio      | 0.12  | 0.40  |     | 0.08  | 0.37  |     | 0.07  | 0.29  |     | 0.08  | 0.30  | 0.30  |
| v/c Ratio               | 1.52  | 1.16  |     | 1.37  | 1.24  |     | 1.11  | 0.39  |     | 1.32  | 0.72  | 0.46  |
| Control Delay           | 279.1 | 101.3 |     | 233.6 | 137.5 |     | 145.1 | 31.8  |     | 196.6 | 23.9  | 3.4   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.4   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 279.1 | 101.4 |     | 233.6 | 137.9 |     | 145.1 | 31.8  |     | 196.6 | 23.9  | 3.4   |
| LOS                     | F     | F     |     | F     | F     |     | F     | C     |     | F     | C     | A     |
| Approach Delay          |       | 122.2 |     |       | 145.6 |     |       | 76.1  |     |       | 74.4  |       |
| Approach LOS            |       | F     |     |       | F     |     |       | E     |     |       | E     |       |
| Queue Length 50th (ft)  | ~318  | ~739  |     | ~194  | ~763  |     | ~109  | 108   |     | ~168  | 176   | 19    |
| Queue Length 95th (ft)  | m#455 | m#832 |     | m#301 | #869  |     | #194  | 154   |     | m#179 | m183  | m23   |
| Internal Link Dist (ft) |       | 460   |     |       | 1353  |     |       | 924   |     |       | 3029  |       |
| Turn Bay Length (ft)    | 340   |       |     | 200   |       |     | 170   |       |     | 210   |       |       |
| Base Capacity (vph)     | 195   | 1914  |     | 139   | 1751  |     | 216   | 968   |     | 243   | 529   | 613   |
| Starvation Cap Reductn  | 0     | 26    |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 221   |     | 0     | 0     |     | 0     | 0     | 10    |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.52  | 1.18  |     | 1.37  | 1.42  |     | 1.11  | 0.39  |     | 1.32  | 0.72  | 0.46  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 4 (3%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.52  
 Intersection Signal Delay: 119.2      Intersection LOS: F  
 Intersection Capacity Utilization 105.5%      ICU Level of Service G  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

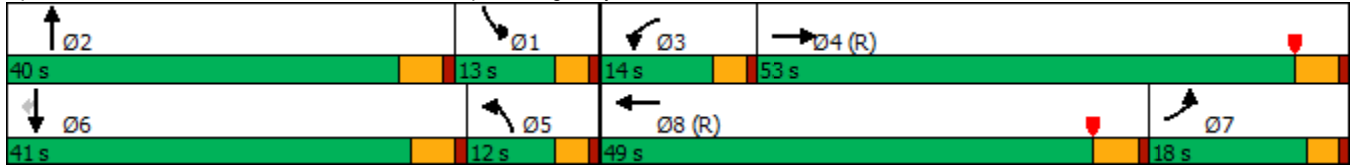
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Associated Road & Imperial Highway





Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

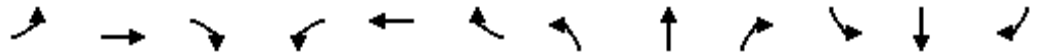
PM Year 2035  
 PM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 21    | 2088  | 308   | 254   | 2154  | 63    | 276   | 51    | 292   | 28    | 25    | 15    |
| Future Volume (vph)        | 21    | 2088  | 308   | 254   | 2154  | 63    | 276   | 51    | 292   | 28    | 25    | 15    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 140   |       | 200   | 225   |       | 0     | 195   |       | 0     | 85    |       | 0     |
| Storage Lanes              | 1     |       | 1     | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00  | 0.91  | 0.91  | 0.95  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       |       | 0.850 |       | 0.996 |       |       |       | 0.850 |       | 0.944 |       |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.967 |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4818  | 1500  | 1676  | 4798  | 0     | 1593  | 1621  | 1500  | 1676  | 1666  | 0     |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.967 |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4818  | 1500  | 1676  | 4798  | 0     | 1593  | 1621  | 1500  | 1676  | 1666  | 0     |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 198   |       | 6     |       |       |       | 292   |       | 15    |       |
| Link Speed (mph)           |       | 30    |       | 30    |       |       |       | 30    |       | 30    |       | 30    |
| Link Distance (ft)         |       | 1433  |       | 3487  |       |       |       | 2609  |       | 962   |       |       |
| Travel Time (s)            |       | 32.6  |       | 79.3  |       |       |       | 59.3  |       | 21.9  |       |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 21    | 2088  | 308   | 254   | 2154  | 63    | 276   | 51    | 292   | 28    | 25    | 15    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       | 41%   |       |       |       |       |       |
| Lane Group Flow (vph)      | 21    | 2088  | 308   | 254   | 2217  | 0     | 163   | 164   | 292   | 28    | 40    | 0     |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       | 24    |       |       |       | 12    |       | 12    |       |       |
| Link Offset(ft)            |       | 0     |       | 0     |       |       |       | 0     |       | 0     |       |       |
| Crosswalk Width(ft)        |       | 16    |       | 16    |       |       |       | 16    |       | 16    |       |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 2 Position(ft)    |       | 94    |       | 94    |       |       |       | 94    |       | 94    |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       | 6     |       |       |       | 6     |       | 6     |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       | Cl+Ex |       |       |       | Cl+Ex |       | Cl+Ex |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       | 0.0   |       |       |       | 0.0   |       | 0.0   |       | 0.0   |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    |       | Split | NA    | Perm  | Split | NA    |       |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       |       |       |       | 2     |       |       |       |

Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

PM Year 2035  
 PM Year 2035



| Lane Group              | EBL  | EBT   | EBR   | WBL   | WBT   | WBR | NBL   | NBT   | NBR   | SBL  | SBT  | SBR |
|-------------------------|------|-------|-------|-------|-------|-----|-------|-------|-------|------|------|-----|
| Detector Phase          | 7    | 4     | 4     | 3     | 8     |     | 2     | 2     | 2     | 6    | 6    |     |
| Switch Phase            |      |       |       |       |       |     |       |       |       |      |      |     |
| Minimum Initial (s)     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0  | 6.0  |     |
| Minimum Split (s)       | 10.0 | 33.0  | 33.0  | 10.0  | 26.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (s)         | 10.0 | 59.0  | 59.0  | 23.0  | 72.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (%)         | 8.3% | 49.2% | 49.2% | 19.2% | 60.0% |     | 22.5% | 22.5% | 22.5% | 9.2% | 9.2% |     |
| Maximum Green (s)       | 6.0  | 54.0  | 54.0  | 19.0  | 67.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Yellow Time (s)         | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   |     | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |     |
| All-Red Time (s)        | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0  | 1.0  |     |
| Lost Time Adjust (s)    | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Lost Time (s)     | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   |     | 5.0   | 5.0   | 5.0   | 5.0  | 5.0  |     |
| Lead/Lag                | Lead | Lead  | Lead  | Lag   | Lag   |     |       |       |       |      |      |     |
| Lead-Lag Optimize?      | Yes  | Yes   | Yes   | Yes   | Yes   |     |       |       |       |      |      |     |
| Vehicle Extension (s)   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |     |
| Recall Mode             | None | C-Max | C-Max | None  | C-Max |     | Max   | Max   | Max   | Max  | Max  |     |
| Walk Time (s)           |      | 7.0   | 7.0   |       | 7.0   |     | 7.0   | 7.0   | 7.0   |      |      |     |
| Flash Dont Walk (s)     |      | 21.0  | 21.0  |       | 14.0  |     | 15.0  | 15.0  | 15.0  |      |      |     |
| Pedestrian Calls (#/hr) |      | 2     | 2     |       | 2     |     | 2     | 2     | 2     |      |      |     |
| Act Effct Green (s)     | 6.0  | 54.0  | 54.0  | 19.0  | 73.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Actuated g/C Ratio      | 0.05 | 0.45  | 0.45  | 0.16  | 0.61  |     | 0.18  | 0.18  | 0.18  | 0.05 | 0.05 |     |
| v/c Ratio               | 0.25 | 0.96  | 0.39  | 0.96  | 0.76  |     | 0.56  | 0.55  | 0.57  | 0.34 | 0.41 |     |
| Control Delay           | 81.9 | 9.1   | 1.2   | 61.0  | 3.5   |     | 52.9  | 52.5  | 9.6   | 66.4 | 51.9 |     |
| Queue Delay             | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Delay             | 81.9 | 9.1   | 1.2   | 61.0  | 3.5   |     | 52.9  | 52.5  | 9.6   | 66.4 | 51.9 |     |
| LOS                     | F    | A     | A     | E     | A     |     | D     | D     | A     | E    | D    |     |
| Approach Delay          |      | 8.7   |       |       | 9.4   |     |       | 32.4  |       |      | 57.8 |     |
| Approach LOS            |      | A     |       |       | A     |     |       | C     |       |      | E    |     |
| Queue Length 50th (ft)  | 17   | 106   | 9     | 187   | 45    |     | 122   | 123   | 0     | 21   | 19   |     |
| Queue Length 95th (ft)  | m16  | m91   | m7    | m#206 | m108  |     | 200   | 200   | 79    | 53   | 56   |     |
| Internal Link Dist (ft) |      | 1353  |       |       | 3407  |     |       | 2529  |       |      | 882  |     |
| Turn Bay Length (ft)    | 140  |       | 200   | 225   |       |     | 195   |       |       | 85   |      |     |
| Base Capacity (vph)     | 83   | 2168  | 783   | 265   | 2920  |     | 292   | 297   | 513   | 83   | 97   |     |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Spillback Cap Reductn   | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Storage Cap Reductn     | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Reduced v/c Ratio       | 0.25 | 0.96  | 0.39  | 0.96  | 0.76  |     | 0.56  | 0.55  | 0.57  | 0.34 | 0.41 |     |

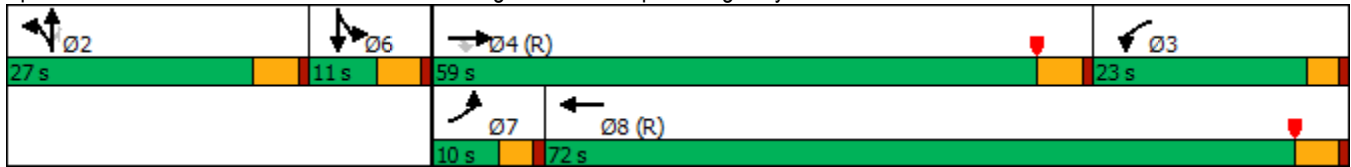
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 55 (46%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 105  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 12.2 Intersection LOS: B  
 Intersection Capacity Utilization 85.3% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Placentia Avenue/Castlegate Lane & Imperial Highway



Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

PM Year 2035  
PM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 235   | 1557  | 239   | 201   | 1718  | 347   | 398   | 661   | 112   | 286   | 507   | 127   |
| Future Volume (vph)        | 235   | 1557  | 239   | 201   | 1718  | 347   | 398   | 661   | 112   | 286   | 507   | 127   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 185   |       | 0     | 220   |       | 0     | 150   |       | 0     | 205   |       | 0     |
| Storage Lanes              | 2     |       | 0     | 2     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 0.91  | 0.97  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.980 |       |       | 0.975 |       |       | 0.978 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4721  | 0     | 3252  | 4697  | 0     | 3252  | 3279  | 0     | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4721  | 0     | 3252  | 4697  | 0     | 3252  | 3279  | 0     | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 30    |       | 45    |       |       | 15    |       |       |       |       | 136   |
| Link Speed (mph)           |       | 30    |       | 30    |       |       | 30    |       |       |       | 30    |       |
| Link Distance (ft)         |       | 3487  |       | 3626  |       |       | 1318  |       |       |       | 1319  |       |
| Travel Time (s)            |       | 79.3  |       | 82.4  |       |       | 30.0  |       |       |       | 30.0  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 235   | 1557  | 239   | 201   | 1718  | 347   | 398   | 661   | 112   | 286   | 507   | 127   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 235   | 1796  | 0     | 201   | 2065  | 0     | 398   | 773   | 0     | 286   | 507   | 127   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       | 24    |       |       | 24    |       |       | 24    |       | 24    |
| Link Offset(ft)            |       | 0     |       | 0     |       |       | 0     |       |       | 0     |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       | 16    |       |       | 16    |       |       | 16    |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       | 94    |       |       | 94    |       |       | 94    |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       | 6     |       |       | 6     |       |       | 6     |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

PM Year 2035  
PM Year 2035



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 40.0  |     | 10.0  | 31.0  |     | 10.0  | 31.0  | 31.0  |
| Total Split (s)         | 13.0  | 56.0  |     | 14.0  | 57.0  |     | 19.0  | 35.0  |     | 15.0  | 31.0  | 31.0  |
| Total Split (%)         | 10.8% | 46.7% |     | 11.7% | 47.5% |     | 15.8% | 29.2% |     | 12.5% | 25.8% | 25.8% |
| Maximum Green (s)       | 9.0   | 51.0  |     | 10.0  | 52.0  |     | 15.0  | 30.0  |     | 11.0  | 26.0  | 26.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 28.0  |     |       | 19.0  |     |       | 19.0  | 19.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 9.0   | 51.1  |     | 9.9   | 52.0  |     | 15.0  | 30.0  |     | 11.0  | 26.0  | 26.0  |
| Actuated g/C Ratio      | 0.08  | 0.43  |     | 0.08  | 0.43  |     | 0.12  | 0.25  |     | 0.09  | 0.22  | 0.22  |
| v/c Ratio               | 0.97  | 0.89  |     | 0.75  | 1.00  |     | 0.98  | 0.93  |     | 0.96  | 0.70  | 0.29  |
| Control Delay           | 61.1  | 9.5   |     | 91.5  | 29.5  |     | 92.6  | 61.7  |     | 97.1  | 36.8  | 5.3   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 61.1  | 9.5   |     | 91.5  | 29.5  |     | 92.6  | 61.7  |     | 97.1  | 36.8  | 5.3   |
| LOS                     | E     | A     |     | F     | C     |     | F     | E     |     | F     | D     | A     |
| Approach Delay          |       | 15.4  |     |       | 35.0  |     |       | 72.2  |     |       | 51.2  |       |
| Approach LOS            |       | B     |     |       | C     |     |       | E     |     |       | D     |       |
| Queue Length 50th (ft)  | 89    | 54    |     | 84    | ~152  |     | 160   | 304   |     | 121   | 186   | 12    |
| Queue Length 95th (ft)  | m#108 | m104  |     | m105  | #682  |     | #263  | #426  |     | #208  | 250   | m46   |
| Internal Link Dist (ft) |       | 3407  |     |       | 3546  |     |       | 1238  |     |       | 1239  |       |
| Turn Bay Length (ft)    | 185   |       |     | 220   |       |     | 150   |       |     | 205   |       |       |
| Base Capacity (vph)     | 243   | 2028  |     | 271   | 2060  |     | 406   | 831   |     | 298   | 726   | 431   |
| Starvation Cap Reductn  | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.97  | 0.89  |     | 0.74  | 1.00  |     | 0.98  | 0.93  |     | 0.96  | 0.70  | 0.29  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 119 (99%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 37.9  
 Intersection LOS: D  
 Intersection Capacity Utilization 96.9%  
 ICU Level of Service F  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

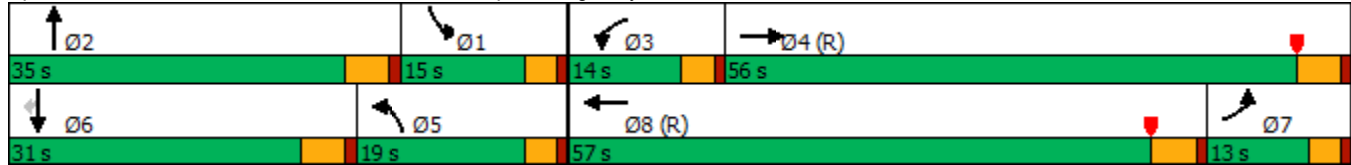
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Kraemer Boulevard & Imperial Highway



Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

PM Year 2035  
 PM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑    | ↔     | ↔↔    | ↑↑    | ↔     |
| Traffic Volume (vph)       | 252   | 1957  | 163   | 180   | 1457  | 143   | 125   | 284   | 138   | 229   | 233   | 141   |
| Future Volume (vph)        | 252   | 1957  | 163   | 180   | 1457  | 143   | 125   | 284   | 138   | 229   | 233   | 141   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Storage Lanes              | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 1.00  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 150   |       |       | 143   |       |       | 136   |       |       | 141   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3626  |       |       | 3640  |       |       | 1142  |       |       |       | 3502  |
| Travel Time (s)            |       | 82.4  |       |       | 82.7  |       |       | 26.0  |       |       |       | 79.6  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 252   | 1957  | 163   | 180   | 1457  | 143   | 125   | 284   | 138   | 229   | 233   | 141   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 252   | 1957  | 163   | 180   | 1457  | 143   | 125   | 284   | 138   | 229   | 233   | 141   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

PM Year 2035  
 PM Year 2035



| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     | 4     | 3     | 8     | 8     | 5    | 2     | 2     | 1     | 6     | 6     |
| Switch Phase            |       |       |       |       |       |       |      |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  | 38.0  | 10.0  | 40.0  | 40.0  | 10.0 | 47.0  | 47.0  | 10.0  | 49.0  | 49.0  |
| Total Split (s)         | 15.0  | 51.0  | 51.0  | 10.0  | 46.0  | 46.0  | 10.0 | 47.0  | 47.0  | 12.0  | 49.0  | 49.0  |
| Total Split (%)         | 12.5% | 42.5% | 42.5% | 8.3%  | 38.3% | 38.3% | 8.3% | 39.2% | 39.2% | 10.0% | 40.8% | 40.8% |
| Maximum Green (s)       | 11.0  | 46.0  | 46.0  | 6.0   | 41.0  | 41.0  | 6.0  | 42.0  | 42.0  | 8.0   | 44.0  | 44.0  |
| Yellow Time (s)         | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lag  | Lead  | Lead  | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes  | Yes   | Yes   | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max | C-Max | None  | C-Max | C-Max | None | Max   | Max   | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   | 7.0   |       | 7.0   | 7.0   |      | 7.0   | 7.0   |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  | 26.0  |       | 28.0  | 28.0  |      | 35.0  | 35.0  |       | 37.0  | 37.0  |
| Pedestrian Calls (#/hr) |       | 2     | 2     |       | 2     | 2     |      | 2     | 2     |       | 2     | 2     |
| Act Effct Green (s)     | 11.0  | 46.0  | 46.0  | 6.0   | 41.0  | 41.0  | 6.0  | 42.0  | 42.0  | 8.0   | 44.0  | 44.0  |
| Actuated g/C Ratio      | 0.09  | 0.38  | 0.38  | 0.05  | 0.34  | 0.34  | 0.05 | 0.35  | 0.35  | 0.07  | 0.37  | 0.37  |
| v/c Ratio               | 0.85  | 1.06  | 0.24  | 1.11  | 0.89  | 0.24  | 0.77 | 0.24  | 0.23  | 1.06  | 0.19  | 0.22  |
| Control Delay           | 65.2  | 75.6  | 13.1  | 111.7 | 13.4  | 1.3   | 85.9 | 28.4  | 5.6   | 127.3 | 24.1  | 5.4   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 65.2  | 75.6  | 13.1  | 111.7 | 13.4  | 1.3   | 85.9 | 28.4  | 5.6   | 127.3 | 24.1  | 5.4   |
| LOS                     | E     | E     | B     | F     | B     | A     | F    | C     | A     | F     | C     | A     |
| Approach Delay          |       | 70.2  |       |       | 22.3  |       |      | 35.8  |       |       | 58.9  |       |
| Approach LOS            |       | E     |       |       | C     |       |      | D     |       |       | E     |       |
| Queue Length 50th (ft)  | 105   | ~608  | 44    | ~78   | 97    | 3     | 50   | 81    | 1     | ~100  | 60    | 17    |
| Queue Length 95th (ft)  | m124  | m#697 | m64   | m#97  | 147   | m3    | #101 | 116   | 45    | m#176 | m100  | m26   |
| Internal Link Dist (ft) |       | 3546  |       |       | 3560  |       |      | 1062  |       |       | 3422  |       |
| Turn Bay Length (ft)    | 190   |       | 315   | 260   |       | 305   | 150  |       | 150   | 240   |       | 185   |
| Base Capacity (vph)     | 298   | 1846  | 667   | 162   | 1646  | 606   | 162  | 1173  | 613   | 216   | 1229  | 639   |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.85  | 1.06  | 0.24  | 1.11  | 0.89  | 0.24  | 0.77 | 0.24  | 0.23  | 1.06  | 0.19  | 0.22  |

Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 26 (22%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.11   |
| Intersection Signal Delay:         | 49.3   |
| Intersection LOS:                  | D  |
| Intersection Capacity Utilization: | 75.5%  |
| ICU Level of Service:              | D  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.



21: Valencia Avenue/ Valencia Avenue & Imperial Highway

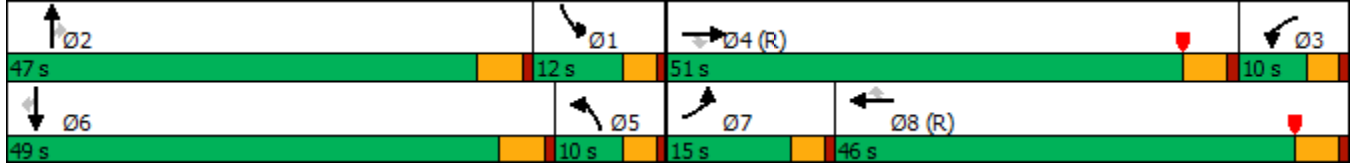
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Valencia Avenue/ Valencia Avenue & Imperial Highway



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

PM Year 2035  
PM Year 2035



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 73    | 1905  | 300   | 168   | 1479  | 845   | 271   | 534   | 129   | 984   | 464   | 21    |
| Future Volume (vph)        | 73    | 1905  | 300   | 168   | 1479  | 845   | 271   | 534   | 129   | 984   | 464   | 21    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.980 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 27    |       |       |       | 291   |       |       | 136   |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       |       | 1486  |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       |       | 33.8  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 73    | 1905  | 300   | 168   | 1479  | 845   | 271   | 534   | 129   | 984   | 464   | 21    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 73    | 2205  | 0     | 168   | 1479  | 845   | 271   | 534   | 129   | 984   | 464   | 21    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

PM Year 2035  
PM Year 2035



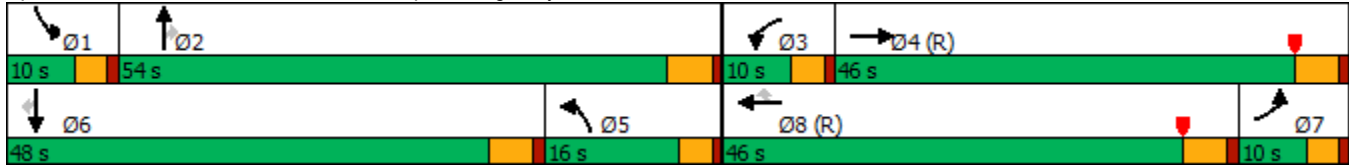
| Lane Group              | EBL  | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL    | SBT    | SBR   |
|-------------------------|------|-------|-----|-------|-------|-------|-------|-------|-------|--------|--------|-------|
| Detector Phase          | 7    | 4     |     | 3     | 8     | 8     | 5     | 2     | 2     | 1      | 6      | 6     |
| Switch Phase            |      |       |     |       |       |       |       |       |       |        |        |       |
| Minimum Initial (s)     | 6.0  | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0    | 6.0    | 6.0   |
| Minimum Split (s)       | 10.0 | 46.0  |     | 10.0  | 38.0  | 38.0  | 10.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (s)         | 10.0 | 46.0  |     | 10.0  | 46.0  | 46.0  | 16.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (%)         | 8.3% | 38.3% |     | 8.3%  | 38.3% | 38.3% | 13.3% | 45.0% | 45.0% | 8.3%   | 40.0%  | 40.0% |
| Maximum Green (s)       | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Yellow Time (s)         | 3.0  | 4.0   |     | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0    | 4.0    | 4.0   |
| All-Red Time (s)        | 1.0  | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    | 1.0    | 1.0   |
| Lost Time Adjust (s)    | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Lost Time (s)     | 4.0  | 5.0   |     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0    | 5.0    | 5.0   |
| Lead/Lag                | Lag  | Lag   |     | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead   | Lead   | Lead  |
| Lead-Lag Optimize?      | Yes  | Yes   |     | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes    | Yes    | Yes   |
| Vehicle Extension (s)   | 3.0  | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0    | 3.0    | 3.0   |
| Recall Mode             | None | C-Max |     | None  | C-Max | C-Max | None  | Max   | Max   | None   | Max    | Max   |
| Walk Time (s)           |      | 7.0   |     |       | 7.0   | 7.0   |       | 7.0   | 7.0   |        | 7.0    | 7.0   |
| Flash Dont Walk (s)     |      | 34.0  |     |       | 26.0  | 26.0  |       | 42.0  | 42.0  |        | 36.0   | 36.0  |
| Pedestrian Calls (#/hr) |      | 2     |     |       | 2     | 2     |       | 2     | 2     |        | 2      | 2     |
| Act Effct Green (s)     | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Actuated g/C Ratio      | 0.05 | 0.34  |     | 0.05  | 0.34  | 0.34  | 0.10  | 0.41  | 0.41  | 0.05   | 0.36   | 0.36  |
| v/c Ratio               | 0.88 | 1.35  |     | 1.04  | 0.90  | 1.20  | 0.83  | 0.39  | 0.19  | 6.07   | 0.39   | 0.03  |
| Control Delay           | 61.2 | 186.9 |     | 136.0 | 46.1  | 127.9 | 75.0  | 26.0  | 4.0   | 2302.6 | 30.7   | 0.0   |
| Queue Delay             | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Delay             | 61.2 | 186.9 |     | 136.0 | 46.1  | 127.9 | 75.0  | 26.0  | 4.0   | 2302.6 | 30.7   | 0.0   |
| LOS                     | E    | F     |     | F     | D     | F     | E     | C     | A     | F      | C      | A     |
| Approach Delay          |      | 182.8 |     |       | 79.9  |       |       | 37.2  |       |        | 1552.1 |       |
| Approach LOS            |      | F     |     |       | E     |       |       | D     |       |        | F      |       |
| Queue Length 50th (ft)  | 52   | ~793  |     | ~72   | 396   | ~639  | 108   | 151   | 0     | ~756   | 111    | 0     |
| Queue Length 95th (ft)  | m52  | m#731 |     | #145  | 463   | #886  | #178  | 197   | 34    | #875   | m138   | m0    |
| Internal Link Dist (ft) |      | 3560  |     |       | 1794  |       |       | 838   |       |        | 1406   |       |
| Turn Bay Length (ft)    | 220  |       |     | 230   |       | 270   | 135   |       | 100   | 185    |        | 50    |
| Base Capacity (vph)     | 83   | 1630  |     | 162   | 1646  | 704   | 325   | 1369  | 692   | 162    | 1201   | 630   |
| Starvation Cap Reductn  | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Spillback Cap Reductn   | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Storage Cap Reductn     | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Reduced v/c Ratio       | 0.88 | 1.35  |     | 1.04  | 0.90  | 1.20  | 0.83  | 0.39  | 0.19  | 6.07   | 0.39   | 0.03  |

Intersection Summary

|   |  |
|---|--|
| Area Type:  | Other  |
| Cycle Length:   | 120  |
| Actuated Cycle Length:                                      | 120  |
| Offset:   | 80 (67%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:  | 120  |
| Control Type:   | Actuated-Coordinated   |
| Maximum v/c Ratio:  | 6.07   |
| Intersection Signal Delay:                                  | 408.5  |
| Intersection LOS:   | F  |
| Intersection Capacity Utilization:                          | 111.2%   |
| ICU Level of Service:                                       | H  |
| Analysis Period (min):                                      | 15   |
| ~ Volume exceeds capacity, queue is theoretically infinite. |  |

Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Rose Drive & Imperial Highway



*APPENDIX F-II*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

Lanes, Volumes, Timings  
2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

AM Year 2035 Plus Project  
AM Year 2035 Plus Project



| Lane Group                 | EBL  | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR   | SBL   | SBT  | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↗↗    | ↘↘    | ↑↑↑   |       |      |      |       | ↗↗    |      | ↗↗    |
| Traffic Volume (vph)       | 0    | 1872  | 619   | 276   | 2209  | 0     | 0    | 0    | 0     | 1069  | 0    | 695   |
| Future Volume (vph)        | 0    | 1872  | 619   | 276   | 2209  | 0     | 0    | 0    | 0     | 1069  | 0    | 695   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  | 1800  | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 0     | 70    |       | 0     | 0    |      | 0     | 0     |      | 0     |
| Storage Lanes              | 0    |       | 2     | 2     |       | 0     | 0    |      | 0     | 2     |      | 2     |
| Taper Length (ft)          | 90   |       |       | 90    |       |       | 90   |      |       | 90    |      |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.88  | 0.97  | 0.91  | 1.00  | 1.00 | 1.00 | 1.00  | 0.97  | 1.00 | 0.88  |
| Frt                        |      |       | 0.850 |       |       |       |      |      |       |       |      | 0.850 |
| Flt Protected              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (prot)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Flt Permitted              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (perm)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Right Turn on Red          |      |       | Yes   |       |       | Yes   |      |      | Yes   |       |      | Yes   |
| Satd. Flow (RTOR)          |      |       | 473   |       |       |       |      |      |       |       |      | 55    |
| Link Speed (mph)           |      | 45    |       |       | 45    |       |      | 30   |       |       | 30   |       |
| Link Distance (ft)         |      | 453   |       |       | 598   |       |      | 824  |       |       | 1360 |       |
| Travel Time (s)            |      | 6.9   |       |       | 9.1   |       |      | 18.7 |       |       | 30.9 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1872  | 619   | 276   | 2209  | 0     | 0    | 0    | 0     | 1069  | 0    | 695   |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |      |      |       |       |      |       |
| Lane Group Flow (vph)      | 0    | 1872  | 619   | 276   | 2209  | 0     | 0    | 0    | 0     | 1069  | 0    | 695   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    | No   | No   | No    | No    | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right | Left  | Left | Right |
| Median Width(ft)           |      | 24    |       |       | 24    |       |      | 24   |       |       | 24   |       |
| Link Offset(ft)            |      | 0     |       |       | 0     |       |      | 0    |       |       | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |       | 16    |       |      | 16   |       |       | 16   |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |      |      |       |       |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     | 15    |      | 9     |
| Number of Detectors        |      | 2     | 1     | 1     | 2     |       |      |      |       | 1     |      | 1     |
| Detector Template          |      | Thru  | Right | Left  | Thru  |       |      |      |       | Left  |      | Right |
| Leading Detector (ft)      |      | 100   | 20    | 20    | 100   |       |      |      |       | 20    |      | 20    |
| Trailing Detector (ft)     |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Size(ft)        |      | 6     | 20    | 20    | 6     |       |      |      |       | 20    |      | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |      |      |       | Cl+Ex |      | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 2 Position(ft)    |      | 94    |       |       | 94    |       |      |      |       |       |      |       |
| Detector 2 Size(ft)        |      | 6     |       |       | 6     |       |      |      |       |       |      |       |
| Detector 2 Type            |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |       |      |       |
| Detector 2 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |       | 0.0   |       |      |      |       |       |      |       |
| Turn Type                  |      | NA    | Perm  | Prot  | NA    |       |      |      |       | Prot  |      | Prot  |
| Protected Phases           |      | 2     |       | 1     | 6     |       |      |      |       | 4     |      | 4     |
| Permitted Phases           |      |       | 2     |       |       |       |      |      |       |       |      |       |

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group              | EBL | EBT   | EBR   | WBL   | WBT   | WBR | NBL | NBT | NBR | SBL   | SBT  | SBR   |
|-------------------------|-----|-------|-------|-------|-------|-----|-----|-----|-----|-------|------|-------|
| Detector Phase          |     | 2     | 2     | 1     | 6     |     |     |     |     | 4     |      | 4     |
| Switch Phase            |     |       |       |       |       |     |     |     |     |       |      |       |
| Minimum Initial (s)     |     | 5.0   | 5.0   | 5.0   | 5.0   |     |     |     |     | 5.0   |      | 5.0   |
| Minimum Split (s)       |     | 20.5  | 20.5  | 9.5   | 31.5  |     |     |     |     | 9.5   |      | 9.5   |
| Total Split (s)         |     | 49.0  | 49.0  | 23.0  | 72.0  |     |     |     |     | 48.0  |      | 48.0  |
| Total Split (%)         |     | 40.8% | 40.8% | 19.2% | 60.0% |     |     |     |     | 40.0% |      | 40.0% |
| Maximum Green (s)       |     | 44.5  | 44.5  | 18.5  | 67.5  |     |     |     |     | 43.5  |      | 43.5  |
| Yellow Time (s)         |     | 3.5   | 3.5   | 3.5   | 3.5   |     |     |     |     | 3.5   |      | 3.5   |
| All-Red Time (s)        |     | 1.0   | 1.0   | 1.0   | 1.0   |     |     |     |     | 1.0   |      | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |     |     |     | 0.0   |      | 0.0   |
| Total Lost Time (s)     |     | 4.5   | 4.5   | 4.5   | 4.5   |     |     |     |     | 4.5   |      | 4.5   |
| Lead/Lag                |     | Lead  | Lead  | Lag   |       |     |     |     |     |       |      |       |
| Lead-Lag Optimize?      |     | Yes   | Yes   | Yes   |       |     |     |     |     |       |      |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   | 3.0   | 3.0   |     |     |     |     | 3.0   |      | 3.0   |
| Recall Mode             |     | C-Max | C-Max | None  | C-Max |     |     |     |     | None  |      | None  |
| Walk Time (s)           |     | 7.0   | 7.0   |       | 7.0   |     |     |     |     |       |      |       |
| Flash Dont Walk (s)     |     | 9.0   | 9.0   |       | 20.0  |     |     |     |     |       |      |       |
| Pedestrian Calls (#/hr) |     | 2     | 2     |       | 2     |     |     |     |     |       |      |       |
| Act Effct Green (s)     |     | 45.3  | 45.3  | 18.5  | 68.3  |     |     |     |     | 42.7  |      | 42.7  |
| Actuated g/C Ratio      |     | 0.38  | 0.38  | 0.15  | 0.57  |     |     |     |     | 0.36  |      | 0.36  |
| v/c Ratio               |     | 1.03  | 0.48  | 0.55  | 0.81  |     |     |     |     | 0.92  |      | 0.71  |
| Control Delay           |     | 61.2  | 13.9  | 51.2  | 23.7  |     |     |     |     | 50.8  |      | 35.2  |
| Queue Delay             |     | 27.9  | 0.1   | 0.0   | 1.0   |     |     |     |     | 0.0   |      | 0.0   |
| Total Delay             |     | 89.1  | 14.0  | 51.2  | 24.7  |     |     |     |     | 50.8  |      | 35.2  |
| LOS                     |     | F     | B     | D     | C     |     |     |     |     | D     |      | D     |
| Approach Delay          |     | 70.4  |       |       | 27.7  |     |     |     |     |       |      | 44.7  |
| Approach LOS            |     | E     |       |       | C     |     |     |     |     |       |      | D     |
| Queue Length 50th (ft)  |     | ~561  | 77    | 106   | 421   |     |     |     |     | 402   |      | 239   |
| Queue Length 95th (ft)  |     | m#587 | m84   | m138  | m521  |     |     |     |     | #530  |      | 318   |
| Internal Link Dist (ft) |     | 373   |       |       | 518   |     |     | 744 |     |       | 1280 |       |
| Turn Bay Length (ft)    |     |       |       | 70    |       |     |     |     |     |       |      |       |
| Base Capacity (vph)     |     | 1817  | 1290  | 501   | 2740  |     |     |     |     | 1178  |      | 992   |
| Starvation Cap Reductn  |     | 125   | 121   | 0     | 276   |     |     |     |     | 0     |      | 0     |
| Spillback Cap Reductn   |     | 69    | 0     | 0     | 199   |     |     |     |     | 0     |      | 2     |
| Storage Cap Reductn     |     | 0     | 0     | 0     | 0     |     |     |     |     | 0     |      | 0     |
| Reduced v/c Ratio       |     | 1.11  | 0.53  | 0.55  | 0.90  |     |     |     |     | 0.91  |      | 0.70  |

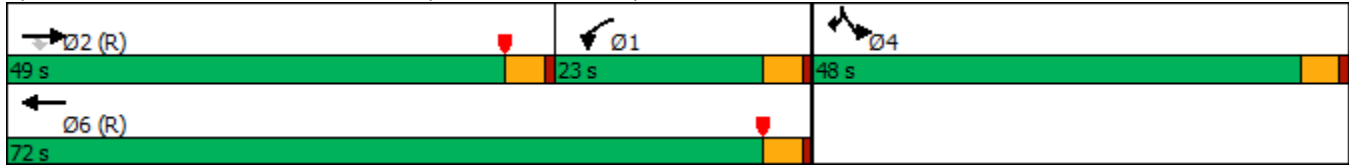
Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow |
| Natural Cycle:                     | 80   |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.03   |
| Intersection Signal Delay:         | 47.9   |
| Intersection LOS:                  | D  |
| Intersection Capacity Utilization: | 89.5%  |
| ICU Level of Service:              | E  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road





Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT  | NBR   | SBL  | SBT  | SBR   |
|----------------------------|------|-------|-------|------|-------|-------|-------|------|-------|------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑     |      | ↑↑↑   | ↑     | ↑↑    |      | ↑     |      |      |       |
| Traffic Volume (vph)       | 0    | 2547  | 404   | 0    | 1446  | 549   | 1051  | 0    | 513   | 0    | 0    | 0     |
| Future Volume (vph)        | 0    | 2547  | 404   | 0    | 1446  | 549   | 1051  | 0    | 513   | 0    | 0    | 0     |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800 | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 100   | 0    |       | 0     | 215   |      | 0     | 0    |      | 0     |
| Storage Lanes              | 0    |       | 1     | 0    |       | 1     | 1     |      | 1     | 0    |      | 0     |
| Taper Length (ft)          | 90   |       |       | 90   |       |       | 90    |      |       | 90   |      |       |
| Lane Util. Factor          | 1.00 | 0.86  | 0.86  | 1.00 | 0.91  | 1.00  | 0.97  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Frt                        |      | 0.998 | 0.850 |      |       | 0.850 |       |      | 0.850 |      |      |       |
| Flt Protected              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (prot)          | 0    | 4544  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Flt Permitted              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (perm)          | 0    | 4544  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Right Turn on Red          |      |       | Yes   |      |       | Yes   |       |      | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |      | 3     | 135   |      |       | 342   |       |      | 14    |      |      |       |
| Link Speed (mph)           |      | 45    |       |      | 45    |       |       | 30   |       |      | 30   |       |
| Link Distance (ft)         |      | 598   |       |      | 654   |       |       | 831  |       |      | 1116 |       |
| Travel Time (s)            |      | 9.1   |       |      | 9.9   |       |       | 18.9 |       |      | 25.4 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 2547  | 404   | 0    | 1446  | 549   | 1051  | 0    | 513   | 0    | 0    | 0     |
| Shared Lane Traffic (%)    |      |       | 10%   |      |       |       |       |      |       |      |      |       |
| Lane Group Flow (vph)      | 0    | 2587  | 364   | 0    | 1446  | 549   | 1051  | 0    | 513   | 0    | 0    | 0     |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No   | No    | No   | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left | Right | Left | Left | Right |
| Median Width(ft)           |      | 24    |       |      | 24    |       |       | 24   |       |      | 24   |       |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0    |       |      | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16   |       |      | 16   |       |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |      |       |      |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |      | 9     | 15   |      | 9     |
| Number of Detectors        |      | 2     | 1     |      | 2     | 1     | 1     |      | 1     |      |      |       |
| Detector Template          |      | Thru  | Right |      | Thru  | Right | Left  |      | Right |      |      |       |
| Leading Detector (ft)      |      | 100   | 20    |      | 100   | 20    | 20    |      | 20    |      |      |       |
| Trailing Detector (ft)     |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Position(ft)    |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Size(ft)        |      | 6     | 20    |      | 6     | 20    | 20    |      | 20    |      |      |       |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |      | Cl+Ex | Cl+Ex | Cl+Ex |      | Cl+Ex |      |      |       |
| Detector 1 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 2 Position(ft)    |      | 94    |       |      | 94    |       |       |      |       |      |      |       |
| Detector 2 Size(ft)        |      | 6     |       |      | 6     |       |       |      |       |      |      |       |
| Detector 2 Type            |      | Cl+Ex |       |      | Cl+Ex |       |       |      |       |      |      |       |
| Detector 2 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |      | 0.0   |       |       |      |       |      |      |       |
| Turn Type                  |      | NA    | Perm  |      | NA    | Free  | Prot  |      | Perm  |      |      |       |
| Protected Phases           |      | 2     |       |      | 6     |       | 3     |      |       |      |      |       |
| Permitted Phases           |      |       | 2     |      |       | Free  |       |      | 3     |      |      |       |

Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group              | EBL | EBT   | EBR   | WBL | WBT   | WBR   | NBL   | NBT  | NBR   | SBL | SBT  | SBR |
|-------------------------|-----|-------|-------|-----|-------|-------|-------|------|-------|-----|------|-----|
| Detector Phase          |     | 2     | 2     |     | 6     |       | 3     |      | 3     |     |      |     |
| Switch Phase            |     |       |       |     |       |       |       |      |       |     |      |     |
| Minimum Initial (s)     |     | 5.0   | 5.0   |     | 5.0   |       | 5.0   |      | 5.0   |     |      |     |
| Minimum Split (s)       |     | 36.5  | 36.5  |     | 20.5  |       | 23.5  |      | 23.5  |     |      |     |
| Total Split (s)         |     | 74.0  | 74.0  |     | 74.0  |       | 46.0  |      | 46.0  |     |      |     |
| Total Split (%)         |     | 61.7% | 61.7% |     | 61.7% |       | 38.3% |      | 38.3% |     |      |     |
| Maximum Green (s)       |     | 69.5  | 69.5  |     | 69.5  |       | 41.5  |      | 41.5  |     |      |     |
| Yellow Time (s)         |     | 3.5   | 3.5   |     | 3.5   |       | 3.5   |      | 3.5   |     |      |     |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   |       | 1.0   |      | 1.0   |     |      |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   |       | 0.0   |      | 0.0   |     |      |     |
| Total Lost Time (s)     |     | 4.5   | 4.5   |     | 4.5   |       | 4.5   |      | 4.5   |     |      |     |
| Lead/Lag                |     |       |       |     |       |       |       |      |       |     |      |     |
| Lead-Lag Optimize?      |     |       |       |     |       |       |       |      |       |     |      |     |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   |       | 3.0   |      | 3.0   |     |      |     |
| Recall Mode             |     | C-Max | C-Max |     | C-Max |       | None  |      | None  |     |      |     |
| Walk Time (s)           |     | 7.0   | 7.0   |     |       |       |       |      |       |     |      |     |
| Flash Dont Walk (s)     |     | 25.0  | 25.0  |     |       |       |       |      |       |     |      |     |
| Pedestrian Calls (#/hr) |     | 2     | 2     |     |       |       |       |      |       |     |      |     |
| Act Effct Green (s)     |     | 69.5  | 69.5  |     | 69.5  | 120.0 | 41.5  |      | 41.5  |     |      |     |
| Actuated g/C Ratio      |     | 0.58  | 0.58  |     | 0.58  | 1.00  | 0.35  |      | 0.35  |     |      |     |
| v/c Ratio               |     | 0.98  | 0.45  |     | 0.52  | 0.37  | 0.94  |      | 0.97  |     |      |     |
| Control Delay           |     | 13.3  | 2.6   |     | 0.9   | 0.8   | 53.5  |      | 71.5  |     |      |     |
| Queue Delay             |     | 26.3  | 0.0   |     | 0.0   | 0.0   | 0.0   |      | 0.0   |     |      |     |
| Total Delay             |     | 39.6  | 2.6   |     | 0.9   | 0.8   | 53.5  |      | 71.5  |     |      |     |
| LOS                     |     | D     | A     |     | A     | A     | D     |      | E     |     |      |     |
| Approach Delay          |     | 35.0  |       |     | 0.9   |       |       | 59.4 |       |     |      |     |
| Approach LOS            |     | D     |       |     | A     |       |       | E    |       |     |      |     |
| Queue Length 50th (ft)  |     | 300   | 46    |     | 12    | 0     | 403   |      | 381   |     |      |     |
| Queue Length 95th (ft)  |     | m280  | m39   |     | m14   | m0    | #537  |      | #610  |     |      |     |
| Internal Link Dist (ft) |     | 518   |       |     | 574   |       |       | 751  |       |     | 1036 |     |
| Turn Bay Length (ft)    |     |       | 100   |     |       |       | 215   |      |       |     |      |     |
| Base Capacity (vph)     |     | 2632  | 803   |     | 2790  | 1500  | 1124  |      | 527   |     |      |     |
| Starvation Cap Reductn  |     | 62    | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Spillback Cap Reductn   |     | 204   | 0     |     | 124   | 0     | 0     |      | 0     |     |      |     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Reduced v/c Ratio       |     | 1.07  | 0.45  |     | 0.54  | 0.37  | 0.94  |      | 0.97  |     |      |     |

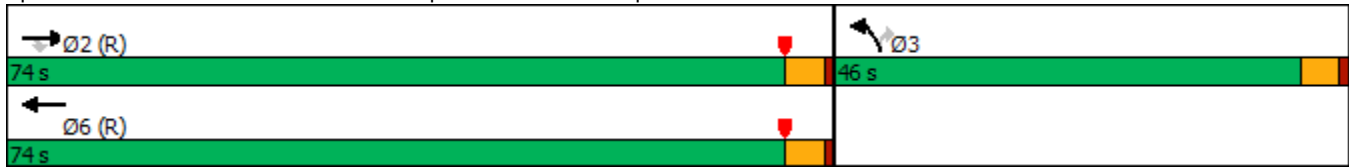
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 9 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 30.4  
 Intersection LOS: C  
 Intersection Capacity Utilization 96.1%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

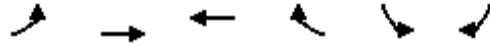
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road



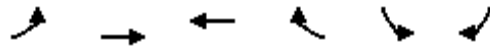
Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SBL   | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑↑   |       | ↓↓↓   | ↓     |
| Traffic Volume (vph)       | 0    | 1674  | 2136  | 0     | 653   | 551   |
| Future Volume (vph)        | 0    | 1674  | 2136  | 0     | 653   | 551   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 0    |       |       | 0     | 0     | 260   |
| Storage Lanes              | 0    |       |       | 0     | 2     | 1     |
| Taper Length (ft)          | 90   |       |       |       | 90    |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.91  | 1.00  | 0.97  | 0.91  |
| Frt                        |      |       |       |       | 0.969 | 0.850 |
| Flt Protected              |      |       |       |       | 0.962 |       |
| Satd. Flow (prot)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Flt Permitted              |      |       |       |       | 0.962 |       |
| Satd. Flow (perm)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Right Turn on Red          |      |       |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |      |       |       |       | 3     | 3     |
| Link Speed (mph)           |      | 45    | 45    |       | 30    |       |
| Link Distance (ft)         |      | 293   | 273   |       | 775   |       |
| Travel Time (s)            |      | 4.4   | 4.1   |       | 17.6  |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 0    | 1674  | 2136  | 0     | 653   | 551   |
| Shared Lane Traffic (%)    |      |       |       |       |       | 31%   |
| Lane Group Flow (vph)      | 0    | 1674  | 2136  | 0     | 824   | 380   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |
| Median Width(ft)           |      | 0     | 0     |       | 24    |       |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    | 16    |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |
| Number of Detectors        |      | 2     | 2     |       | 1     | 1     |
| Detector Template          |      | Thru  | Thru  |       | Left  | Right |
| Leading Detector (ft)      |      | 100   | 100   |       | 20    | 20    |
| Trailing Detector (ft)     |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        |      | 6     | 6     |       | 20    | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |      | 94    | 94    |       |       |       |
| Detector 2 Size(ft)        |      | 6     | 6     |       |       |       |
| Detector 2 Type            |      | Cl+Ex | Cl+Ex |       |       |       |
| Detector 2 Channel         |      |       |       |       |       |       |
| Detector 2 Extend (s)      |      | 0.0   | 0.0   |       |       |       |
| Turn Type                  |      | NA    | NA    |       | Prot  | Prot  |
| Protected Phases           |      | 4     | 8     |       | 6     | 6     |
| Permitted Phases           |      |       |       |       |       |       |

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp



| Lane Group              | EBL | EBT   | WBT   | WBR | SBL   | SBR   |
|-------------------------|-----|-------|-------|-----|-------|-------|
| Detector Phase          |     | 4     | 8     |     | 6     | 6     |
| Switch Phase            |     |       |       |     |       |       |
| Minimum Initial (s)     |     | 6.0   | 6.0   |     | 6.0   | 6.0   |
| Minimum Split (s)       |     | 11.0  | 25.0  |     | 11.0  | 11.0  |
| Total Split (s)         |     | 30.0  | 30.0  |     | 20.0  | 20.0  |
| Total Split (%)         |     | 60.0% | 60.0% |     | 40.0% | 40.0% |
| Maximum Green (s)       |     | 25.0  | 25.0  |     | 15.0  | 15.0  |
| Yellow Time (s)         |     | 4.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     |     | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Lead/Lag                |     |       |       |     |       |       |
| Lead-Lag Optimize?      |     |       |       |     |       |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             |     | C-Max | C-Max |     | Max   | Max   |
| Walk Time (s)           |     |       | 7.0   |     |       |       |
| Flash Dont Walk (s)     |     |       | 13.0  |     |       |       |
| Pedestrian Calls (#/hr) |     |       | 2     |     |       |       |
| Act Effct Green (s)     |     | 25.0  | 25.0  |     | 15.0  | 15.0  |
| Actuated g/C Ratio      |     | 0.50  | 0.50  |     | 0.30  | 0.30  |
| v/c Ratio               |     | 0.69  | 0.89  |     | 0.86  | 0.92  |
| Control Delay           |     | 11.5  | 10.4  |     | 28.3  | 50.9  |
| Queue Delay             |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             |     | 11.5  | 10.4  |     | 28.3  | 50.9  |
| LOS                     |     | B     | B     |     | C     | D     |
| Approach Delay          |     | 11.5  | 10.4  |     | 35.4  |       |
| Approach LOS            |     | B     | B     |     | D     |       |
| Queue Length 50th (ft)  |     | 124   | 177   |     | 114   | 115   |
| Queue Length 95th (ft)  |     | 168   | m284  |     | #207  | #272  |
| Internal Link Dist (ft) |     | 213   | 193   |     | 695   |       |
| Turn Bay Length (ft)    |     |       |       |     |       | 260   |
| Base Capacity (vph)     |     | 2409  | 2409  |     | 959   | 411   |
| Starvation Cap Reductn  |     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   |     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       |     | 0.69  | 0.89  |     | 0.86  | 0.92  |

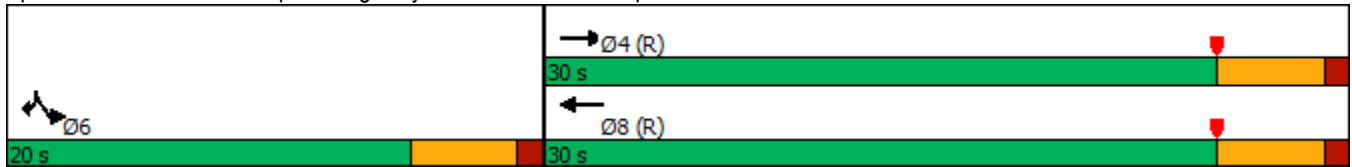
Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 43 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 16.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 120.6%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

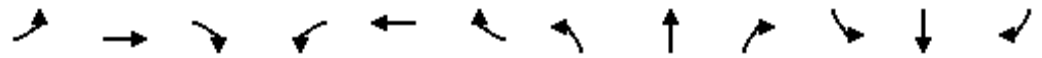
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Imperial Highway & SR-57 SB Off-Ramp



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

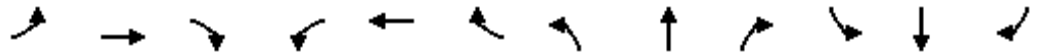
AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT   | NBR   | SBL  | SBT  | SBR   |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|-------|
| Lane Configurations        | ↘     | ↑↑↑   |       |      | ↑↑↑   |       | ↘↘    | ↔     | ↘     |      |      | ↘↘    |
| Traffic Volume (vph)       | 113   | 1551  | 0     | 0    | 1700  | 16    | 1099  | 36    | 908   | 0    | 0    | 92    |
| Future Volume (vph)        | 113   | 1551  | 0     | 0    | 1700  | 16    | 1099  | 36    | 908   | 0    | 0    | 92    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 260   |       | 0     | 0    |       | 0     | 610   |       | 350   | 0    |      | 0     |
| Storage Lanes              | 1     |       | 0     | 0    |       | 0     | 1     |       | 1     | 0    |      | 2     |
| Taper Length (ft)          | 90    |       |       | 90   |       |       | 90    |       |       | 90   |      |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00 | 0.86  | 0.86  | 0.91  | 0.86  | 0.95  | 1.00 | 1.00 | 0.88  |
| Frt                        |       |       |       |      | 0.999 |       |       | 0.891 | 0.850 |      |      | 0.850 |
| Flt Protected              | 0.950 |       |       |      |       |       | 0.950 | 0.990 |       |      |      |       |
| Satd. Flow (prot)          | 1676  | 4818  | 0     | 0    | 6065  | 0     | 3051  | 1339  | 1425  | 0    | 0    | 2640  |
| Flt Permitted              | 0.950 |       |       |      |       |       | 0.950 | 0.990 |       |      |      |       |
| Satd. Flow (perm)          | 1676  | 4818  | 0     | 0    | 6065  | 0     | 3051  | 1339  | 1425  | 0    | 0    | 2640  |
| Right Turn on Red          |       |       | Yes   |      |       | Yes   |       |       | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |       |       |       |      | 2     |       |       | 146   | 148   |      |      | 216   |
| Link Speed (mph)           |       | 45    |       |      | 45    |       |       | 30    |       |      |      | 30    |
| Link Distance (ft)         |       | 271   |       |      | 540   |       |       | 932   |       |      |      | 494   |
| Travel Time (s)            |       | 4.1   |       |      | 8.2   |       |       | 21.2  |       |      |      | 11.2  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 113   | 1551  | 0     | 0    | 1700  | 16    | 1099  | 36    | 908   | 0    | 0    | 92    |
| Shared Lane Traffic (%)    |       |       |       |      |       |       | 10%   |       | 43%   |      |      |       |
| Lane Group Flow (vph)      | 113   | 1551  | 0     | 0    | 1716  | 0     | 989   | 536   | 518   | 0    | 0    | 92    |
| Enter Blocked Intersection | No    | No    | No    | No   | No    | No    | No    | No    | No    | No   | No   | No    |
| Lane Alignment             | Left  | Left  | Right | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right |
| Median Width(ft)           |       | 12    |       |      | 12    |       |       | 24    |       |      |      | 24    |
| Link Offset(ft)            |       | 0     |       |      | 0     |       |       | 0     |       |      |      | 0     |
| Crosswalk Width(ft)        |       | 16    |       |      | 16    |       |       | 16    |       |      |      | 16    |
| Two way Left Turn Lane     |       |       |       |      |       |       |       |       |       |      |      |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     |
| Number of Detectors        | 1     | 2     |       |      | 2     |       | 1     | 2     | 1     |      |      | 1     |
| Detector Template          | Left  | Thru  |       |      | Thru  |       | Left  | Thru  | Right |      |      | Right |
| Leading Detector (ft)      | 20    | 100   |       |      | 100   |       | 20    | 100   | 20    |      |      | 20    |
| Trailing Detector (ft)     | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       |      | 6     |       | 20    | 6     | 20    |      |      | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       |      | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |      |      | Cl+Ex |
| Detector 1 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |      | 94    |       |       | 94    |       |      |      |       |
| Detector 2 Size(ft)        |       | 6     |       |      | 6     |       |       | 6     |       |      |      |       |
| Detector 2 Type            |       | Cl+Ex |       |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |
| Detector 2 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 2 Extend (s)      |       | 0.0   |       |      | 0.0   |       |       | 0.0   |       |      |      |       |
| Turn Type                  | Prot  | NA    |       |      | NA    |       | Split | NA    | Prot  |      |      | Prot  |
| Protected Phases           | 7     | 4     |       |      | 8     |       | 2     | 2     | 2     |      |      | 1     |
| Permitted Phases           |       |       |       |      |       |       |       |       |       |      |      |       |

Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL | WBT   | WBR | NBL   | NBT   | NBR   | SBL | SBT | SBR   |
|-------------------------|-------|-------|-----|-----|-------|-----|-------|-------|-------|-----|-----|-------|
| Detector Phase          | 7     | 4     |     |     | 8     |     | 2     | 2     | 2     |     |     | 1     |
| Switch Phase            |       |       |     |     |       |     |       |       |       |     |     |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     |     | 6.0   |     | 6.0   | 6.0   | 6.0   |     |     | 6.0   |
| Minimum Split (s)       | 10.0  | 32.0  |     |     | 28.0  |     | 11.0  | 11.0  | 11.0  |     |     | 11.0  |
| Total Split (s)         | 12.0  | 50.0  |     |     | 38.0  |     | 39.0  | 39.0  | 39.0  |     |     | 11.0  |
| Total Split (%)         | 12.0% | 50.0% |     |     | 38.0% |     | 39.0% | 39.0% | 39.0% |     |     | 11.0% |
| Maximum Green (s)       | 8.0   | 45.0  |     |     | 33.0  |     | 34.0  | 34.0  | 34.0  |     |     | 6.0   |
| Yellow Time (s)         | 3.0   | 4.0   |     |     | 4.0   |     | 4.0   | 4.0   | 4.0   |     |     | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     |     | 1.0   |     | 1.0   | 1.0   | 1.0   |     |     | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     |     | 5.0   |     | 5.0   | 5.0   | 5.0   |     |     | 5.0   |
| Lead/Lag                | Lead  |       |     |     | Lag   |     | Lead  | Lead  | Lead  |     |     | Lag   |
| Lead-Lag Optimize?      | Yes   |       |     |     | Yes   |     | Yes   | Yes   | Yes   |     |     | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     |     | 3.0   |     | 3.0   | 3.0   | 3.0   |     |     | 3.0   |
| Recall Mode             | None  | C-Max |     |     | C-Max |     | Max   | Max   | Max   |     |     | None  |
| Walk Time (s)           |       | 7.0   |     |     | 7.0   |     |       |       |       |     |     |       |
| Flash Dont Walk (s)     |       | 20.0  |     |     | 16.0  |     |       |       |       |     |     |       |
| Pedestrian Calls (#/hr) |       | 2     |     |     | 2     |     |       |       |       |     |     |       |
| Act Effct Green (s)     | 8.2   | 47.2  |     |     | 35.0  |     | 34.0  | 34.0  | 34.0  |     |     | 6.0   |
| Actuated g/C Ratio      | 0.08  | 0.47  |     |     | 0.35  |     | 0.34  | 0.34  | 0.34  |     |     | 0.06  |
| v/c Ratio               | 0.82  | 0.68  |     |     | 0.81  |     | 0.95  | 0.97  | 0.89  |     |     | 0.25  |
| Control Delay           | 81.2  | 23.2  |     |     | 33.6  |     | 51.9  | 57.4  | 41.7  |     |     | 1.7   |
| Queue Delay             | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0   |
| Total Delay             | 81.2  | 23.2  |     |     | 33.6  |     | 51.9  | 57.4  | 41.7  |     |     | 1.7   |
| LOS                     | F     | C     |     |     | C     |     | D     | E     | D     |     |     | A     |
| Approach Delay          |       | 27.2  |     |     | 33.6  |     |       | 50.8  |       |     |     | 1.7   |
| Approach LOS            |       | C     |     |     | C     |     |       | D     |       |     |     | A     |
| Queue Length 50th (ft)  | 74    | 324   |     |     | 294   |     | 335   | 303   | 245   |     |     | 0     |
| Queue Length 95th (ft)  | m#116 | 389   |     |     | 343   |     | #476  | #567  | #462  |     |     | 0     |
| Internal Link Dist (ft) |       | 191   |     |     | 460   |     |       | 852   |       |     |     | 414   |
| Turn Bay Length (ft)    | 260   |       |     |     |       |     | 610   |       | 350   |     |     |       |
| Base Capacity (vph)     | 137   | 2274  |     |     | 2126  |     | 1037  | 551   | 582   |     |     | 361   |
| Starvation Cap Reductn  | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Storage Cap Reductn     | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Reduced v/c Ratio       | 0.82  | 0.68  |     |     | 0.81  |     | 0.95  | 0.97  | 0.89  |     |     | 0.25  |

Intersection Summary

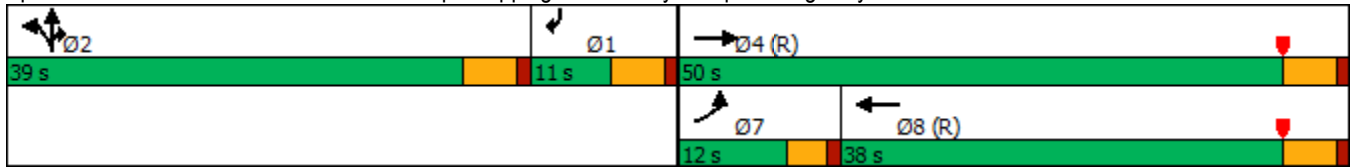
Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 80 (80%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.97  
 Intersection Signal Delay: 37.5  
 Intersection LOS: D  
 Intersection Capacity Utilization 79.5%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.



Queue shown is maximum after two cycles.

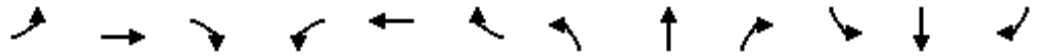
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway



Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

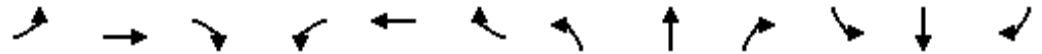
AM Year 2035 Plus Project  
AM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 227   | 2110  | 112   | 101   | 1844  | 108   | 164   | 232   | 80    | 181   | 372   | 177   |
| Future Volume (vph)        | 227   | 2110  | 112   | 101   | 1844  | 108   | 164   | 232   | 80    | 181   | 372   | 177   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 340   |       | 0     | 200   |       | 0     | 170   |       | 0     | 210   |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 1.00  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 1.00  | 1.00  |
| Frt                        |       | 0.992 |       |       | 0.992 |       |       | 0.962 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4779  | 0     | 1676  | 4779  | 0     | 3252  | 3226  | 0     | 3252  | 1765  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4779  | 0     | 1676  | 4779  | 0     | 3252  | 3226  | 0     | 3252  | 1765  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 9     |       |       | 8     |       |       | 40    |       |       |       | 177   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 540   |       |       | 1433  |       |       | 1004  |       |       |       | 3109  |
| Travel Time (s)            |       | 12.3  |       |       | 32.6  |       |       | 22.8  |       |       |       | 70.7  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 227   | 2110  | 112   | 101   | 1844  | 108   | 164   | 232   | 80    | 181   | 372   | 177   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 227   | 2222  | 0     | 101   | 1952  | 0     | 164   | 312   | 0     | 181   | 372   | 177   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 12    |       |       | 12    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

AM Year 2035 Plus Project  
AM Year 2035 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL  | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1    | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |      |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 37.0  |     | 10.0  | 40.0  |     | 10.0 | 41.0  | 41.0  |
| Total Split (s)         | 20.0  | 58.0  |     | 11.0  | 49.0  |     | 10.0  | 40.0  |     | 11.0 | 41.0  | 41.0  |
| Total Split (%)         | 16.7% | 48.3% |     | 9.2%  | 40.8% |     | 8.3%  | 33.3% |     | 9.2% | 34.2% | 34.2% |
| Maximum Green (s)       | 16.0  | 53.0  |     | 7.0   | 44.0  |     | 6.0   | 35.0  |     | 7.0  | 36.0  | 36.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag  | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes  | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |      | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 25.0  |     |       | 28.0  |     |      | 29.0  | 29.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |      | 2     | 2     |
| Act Effct Green (s)     | 16.0  | 53.0  |     | 7.0   | 44.0  |     | 6.0   | 35.0  |     | 7.0  | 36.0  | 36.0  |
| Actuated g/C Ratio      | 0.13  | 0.44  |     | 0.06  | 0.37  |     | 0.05  | 0.29  |     | 0.06 | 0.30  | 0.30  |
| v/c Ratio               | 1.02  | 1.05  |     | 1.04  | 1.11  |     | 1.01  | 0.32  |     | 0.96 | 0.70  | 0.31  |
| Control Delay           | 116.6 | 67.5  |     | 147.6 | 83.2  |     | 130.5 | 29.8  |     | 63.0 | 23.3  | 9.9   |
| Queue Delay             | 0.0   | 20.8  |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   |
| Total Delay             | 116.6 | 88.3  |     | 147.6 | 83.2  |     | 130.5 | 29.8  |     | 63.0 | 23.3  | 9.9   |
| LOS                     | F     | F     |     | F     | F     |     | F     | C     |     | E    | C     | A     |
| Approach Delay          |       | 90.9  |     |       | 86.4  |     |       | 64.5  |     |      | 29.9  |       |
| Approach LOS            |       | F     |     |       | F     |     |       | E     |     |      | C     |       |
| Queue Length 50th (ft)  | ~182  | ~686  |     | ~80   | ~641  |     | ~67   | 86    |     | 77   | 247   | 58    |
| Queue Length 95th (ft)  | #347  | #782  |     | m#196 | #732  |     | #141  | 126   |     | m70  | m213  | m46   |
| Internal Link Dist (ft) |       | 460   |     |       | 1353  |     |       | 924   |     |      | 3029  |       |
| Turn Bay Length (ft)    | 340   |       |     | 200   |       |     | 170   |       |     | 210  |       |       |
| Base Capacity (vph)     | 223   | 2115  |     | 97    | 1757  |     | 162   | 969   |     | 189  | 529   | 573   |
| Starvation Cap Reductn  | 0     | 250   |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Reduced v/c Ratio       | 1.02  | 1.19  |     | 1.04  | 1.11  |     | 1.01  | 0.32  |     | 0.96 | 0.70  | 0.31  |

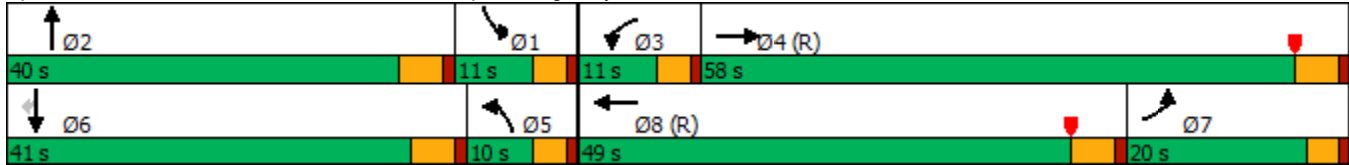
Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 3 (3%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.11   |
| Intersection Signal Delay:         | 79.3   |
| Intersection LOS:                  | E  |
| Intersection Capacity Utilization: | 94.1%  |
| ICU Level of Service:              | F  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

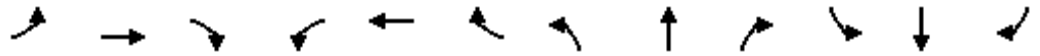
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Associated Road & Imperial Highway



Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

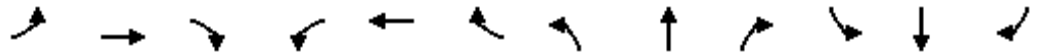
AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↖     | ↑↑↑   | ↗     | ↖     | ↑↑↑   |       | ↖     | ↑     | ↗     | ↖     | ↗     |       |
| Traffic Volume (vph)       | 14    | 2077  | 398   | 191   | 1703  | 35    | 199   | 13    | 159   | 27    | 31    | 15    |
| Future Volume (vph)        | 14    | 2077  | 398   | 191   | 1703  | 35    | 199   | 13    | 159   | 27    | 31    | 15    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 140   |       | 200   | 225   |       | 0     | 195   |       | 0     | 85    |       | 0     |
| Storage Lanes              | 1     |       | 1     | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00  | 0.91  | 0.91  | 0.95  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       |       | 0.850 |       | 0.997 |       |       |       | 0.850 |       | 0.951 |       |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.958 |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4818  | 1500  | 1676  | 4803  | 0     | 1593  | 1606  | 1500  | 1676  | 1678  | 0     |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.958 |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4818  | 1500  | 1676  | 4803  | 0     | 1593  | 1606  | 1500  | 1676  | 1678  | 0     |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 269   |       | 4     |       |       |       | 159   |       | 15    |       |
| Link Speed (mph)           |       | 30    |       | 30    |       |       | 30    |       | 30    |       | 30    |       |
| Link Distance (ft)         |       | 1433  |       | 3487  |       |       | 2609  |       | 962   |       |       |       |
| Travel Time (s)            |       | 32.6  |       | 79.3  |       |       | 59.3  |       | 21.9  |       |       |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 14    | 2077  | 398   | 191   | 1703  | 35    | 199   | 13    | 159   | 27    | 31    | 15    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       | 47%   |       |       |       |       |       |
| Lane Group Flow (vph)      | 14    | 2077  | 398   | 191   | 1738  | 0     | 105   | 107   | 159   | 27    | 46    | 0     |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       | 24    |       |       | 12    |       | 12    |       | 12    |       |
| Link Offset(ft)            |       | 0     |       | 0     |       |       | 0     |       | 0     |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       | 16    |       |       | 16    |       | 16    |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 2 Position(ft)    |       | 94    |       | 94    |       |       | 94    |       | 94    |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       | 6     |       |       | 6     |       | 6     |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       | Cl+Ex |       |       | Cl+Ex |       | Cl+Ex |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       | 0.0   |       |       | 0.0   |       | 0.0   |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    |       | Split | NA    | Perm  | Split | NA    |       |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       |       |       |       | 2     |       |       |       |

Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group              | EBL  | EBT   | EBR   | WBL   | WBT   | WBR | NBL   | NBT   | NBR   | SBL  | SBT  | SBR |
|-------------------------|------|-------|-------|-------|-------|-----|-------|-------|-------|------|------|-----|
| Detector Phase          | 7    | 4     | 4     | 3     | 8     |     | 2     | 2     | 2     | 6    | 6    |     |
| Switch Phase            |      |       |       |       |       |     |       |       |       |      |      |     |
| Minimum Initial (s)     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0  | 6.0  |     |
| Minimum Split (s)       | 10.0 | 33.0  | 33.0  | 10.0  | 26.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (s)         | 10.0 | 62.0  | 62.0  | 20.0  | 72.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (%)         | 8.3% | 51.7% | 51.7% | 16.7% | 60.0% |     | 22.5% | 22.5% | 22.5% | 9.2% | 9.2% |     |
| Maximum Green (s)       | 6.0  | 57.0  | 57.0  | 16.0  | 67.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Yellow Time (s)         | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   |     | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |     |
| All-Red Time (s)        | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0  | 1.0  |     |
| Lost Time Adjust (s)    | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Lost Time (s)     | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   |     | 5.0   | 5.0   | 5.0   | 5.0  | 5.0  |     |
| Lead/Lag                | Lead | Lead  | Lead  | Lag   | Lag   |     |       |       |       |      |      |     |
| Lead-Lag Optimize?      | Yes  | Yes   | Yes   | Yes   | Yes   |     |       |       |       |      |      |     |
| Vehicle Extension (s)   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |     |
| Recall Mode             | None | C-Max | C-Max | None  | C-Max |     | Max   | Max   | Max   | Max  | Max  |     |
| Walk Time (s)           |      | 7.0   | 7.0   |       | 7.0   |     | 7.0   | 7.0   | 7.0   |      |      |     |
| Flash Dont Walk (s)     |      | 21.0  | 21.0  |       | 14.0  |     | 15.0  | 15.0  | 15.0  |      |      |     |
| Pedestrian Calls (#/hr) |      | 2     | 2     |       | 2     |     | 2     | 2     | 2     |      |      |     |
| Act Effct Green (s)     | 6.0  | 57.0  | 57.0  | 16.0  | 73.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Actuated g/C Ratio      | 0.05 | 0.48  | 0.48  | 0.13  | 0.61  |     | 0.18  | 0.18  | 0.18  | 0.05 | 0.05 |     |
| v/c Ratio               | 0.17 | 0.91  | 0.47  | 0.86  | 0.59  |     | 0.36  | 0.36  | 0.39  | 0.33 | 0.47 |     |
| Control Delay           | 81.4 | 7.4   | 0.9   | 59.4  | 3.5   |     | 47.0  | 47.0  | 9.5   | 65.8 | 56.8 |     |
| Queue Delay             | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Delay             | 81.4 | 7.4   | 0.9   | 59.4  | 3.5   |     | 47.0  | 47.0  | 9.5   | 65.8 | 56.8 |     |
| LOS                     | F    | A     | A     | E     | A     |     | D     | D     | A     | E    | E    |     |
| Approach Delay          |      | 6.8   |       |       | 9.1   |     |       | 30.9  |       |      | 60.2 |     |
| Approach LOS            |      | A     |       |       | A     |     |       | C     |       |      | E    |     |
| Queue Length 50th (ft)  | 11   | 82    | 2     | 138   | 51    |     | 75    | 76    | 0     | 21   | 24   |     |
| Queue Length 95th (ft)  | m12  | m80   | m2    | m#262 | 72    |     | 133   | 136   | 59    | 52   | 64   |     |
| Internal Link Dist (ft) |      | 1353  |       |       | 3407  |     |       | 2529  |       |      | 882  |     |
| Turn Bay Length (ft)    | 140  |       | 200   | 225   |       |     | 195   |       |       | 85   |      |     |
| Base Capacity (vph)     | 83   | 2288  | 853   | 223   | 2923  |     | 292   | 294   | 404   | 83   | 98   |     |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Spillback Cap Reductn   | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Storage Cap Reductn     | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Reduced v/c Ratio       | 0.17 | 0.91  | 0.47  | 0.86  | 0.59  |     | 0.36  | 0.36  | 0.39  | 0.33 | 0.47 |     |

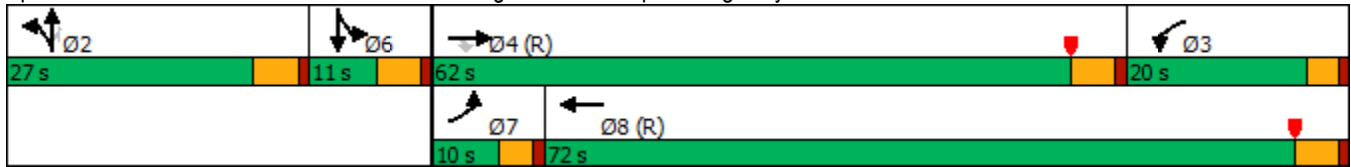
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 56 (47%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 10.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 78.0%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

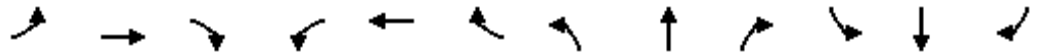
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Placentia Avenue/Castlegate Lane & Imperial Highway



Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

AM Year 2035 Plus Project  
AM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↔↔    | ↕↕↔   |       | ↔↔    | ↕↕↔   |       | ↔↔    | ↕↔    |       | ↔↔    | ↕↕    | ↔↔    |
| Traffic Volume (vph)       | 148   | 1454  | 263   | 77    | 1249  | 96    | 192   | 277   | 94    | 352   | 726   | 123   |
| Future Volume (vph)        | 148   | 1454  | 263   | 77    | 1249  | 96    | 192   | 277   | 94    | 352   | 726   | 123   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 185   |       | 0     | 220   |       | 0     | 150   |       | 0     | 205   |       | 0     |
| Storage Lanes              | 2     |       | 0     | 2     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 0.91  | 0.97  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.977 |       |       | 0.989 |       |       | 0.962 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4707  | 0     | 3252  | 4765  | 0     | 3252  | 3226  | 0     | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4707  | 0     | 3252  | 4765  | 0     | 3252  | 3226  | 0     | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 38    |       |       | 12    |       |       | 36    |       |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3487  |       |       | 3626  |       |       | 1318  |       |       |       | 1319  |
| Travel Time (s)            |       | 79.3  |       |       | 82.4  |       |       | 30.0  |       |       |       | 30.0  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 148   | 1454  | 263   | 77    | 1249  | 96    | 192   | 277   | 94    | 352   | 726   | 123   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 148   | 1717  | 0     | 77    | 1345  | 0     | 192   | 371   | 0     | 352   | 726   | 123   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |



Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

AM Year 2035 Plus Project  
AM Year 2035 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |      |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0 | 40.0  |     | 10.0  | 31.0  |     | 10.0  | 31.0  | 31.0  |
| Total Split (s)         | 14.0  | 57.0  |     | 10.0 | 53.0  |     | 14.0  | 31.0  |     | 22.0  | 39.0  | 39.0  |
| Total Split (%)         | 11.7% | 47.5% |     | 8.3% | 44.2% |     | 11.7% | 25.8% |     | 18.3% | 32.5% | 32.5% |
| Maximum Green (s)       | 10.0  | 52.0  |     | 6.0  | 48.0  |     | 10.0  | 26.0  |     | 18.0  | 34.0  | 34.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead | Lead  |     | Lag   | Lag   |     | Lead  | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |      | 28.0  |     |       | 19.0  |     |       | 19.0  | 19.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 10.0  | 54.0  |     | 6.0  | 48.0  |     | 10.0  | 27.3  |     | 16.7  | 34.0  | 34.0  |
| Actuated g/C Ratio      | 0.08  | 0.45  |     | 0.05 | 0.40  |     | 0.08  | 0.23  |     | 0.14  | 0.28  | 0.28  |
| v/c Ratio               | 0.55  | 0.80  |     | 0.48 | 0.70  |     | 0.71  | 0.49  |     | 0.78  | 0.76  | 0.23  |
| Control Delay           | 30.2  | 4.7   |     | 86.3 | 10.2  |     | 68.5  | 39.1  |     | 56.6  | 25.1  | 0.9   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 30.2  | 4.7   |     | 86.3 | 10.2  |     | 68.5  | 39.1  |     | 56.6  | 25.1  | 0.9   |
| LOS                     | C     | A     |     | F    | B     |     | E     | D     |     | E     | C     | A     |
| Approach Delay          |       | 6.7   |     |      | 14.3  |     |       | 49.1  |     |       | 31.9  |       |
| Approach LOS            |       | A     |     |      | B     |     |       | D     |     |       | C     |       |
| Queue Length 50th (ft)  | 53    | 39    |     | 30   | 65    |     | 75    | 121   |     | 99    | 158   | 0     |
| Queue Length 95th (ft)  | m60   | 88    |     | m33  | m64   |     | #124  | 171   |     | 165   | 239   | m3    |
| Internal Link Dist (ft) |       | 3407  |     |      | 3546  |     |       | 1238  |     |       | 1239  |       |
| Turn Bay Length (ft)    | 185   |       |     | 220  |       |     | 150   |       |     | 205   |       |       |
| Base Capacity (vph)     | 271   | 2139  |     | 162  | 1913  |     | 271   | 761   |     | 487   | 950   | 528   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.55  | 0.80  |     | 0.48 | 0.70  |     | 0.71  | 0.49  |     | 0.72  | 0.76  | 0.23  |

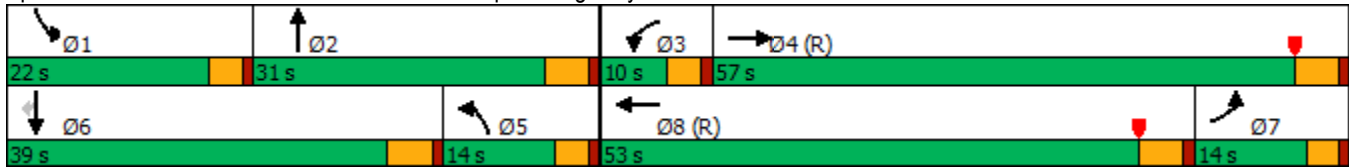
Intersection Summary

|   |  |
|---|--|
| Area Type:  | Other  |
| Cycle Length:   | 120  |
| Actuated Cycle Length:  | 120  |
| Offset:   | 1 (1%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:  | 95   |
| Control Type:   | Actuated-Coordinated   |
| Maximum v/c Ratio:  | 0.80   |
| Intersection Signal Delay:                                      | 19.6   |
| Intersection LOS:   | B  |
| Intersection Capacity Utilization:                              | 82.8%  |
| ICU Level of Service:   | E  |
| Analysis Period (min):  | 15   |
| # 95th percentile volume exceeds capacity, queue may be longer. |  |

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Kraemer Boulevard & Imperial Highway



Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

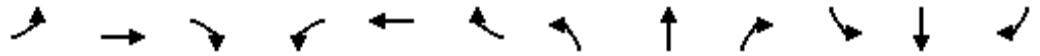
AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑    | ↔     | ↔↔    | ↑↑    | ↔     |
| Traffic Volume (vph)       | 218   | 1106  | 99    | 127   | 1720  | 163   | 144   | 214   | 129   | 311   | 347   | 247   |
| Future Volume (vph)        | 218   | 1106  | 99    | 127   | 1720  | 163   | 144   | 214   | 129   | 311   | 347   | 247   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Storage Lanes              | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 1.00  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 145   |       |       | 156   |       |       | 145   |       |       | 180   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3626  |       |       | 3640  |       |       | 1142  |       |       |       | 3502  |
| Travel Time (s)            |       | 82.4  |       |       | 82.7  |       |       | 26.0  |       |       |       | 79.6  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 218   | 1106  | 99    | 127   | 1720  | 163   | 144   | 214   | 129   | 311   | 347   | 247   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 218   | 1106  | 99    | 127   | 1720  | 163   | 144   | 214   | 129   | 311   | 347   | 247   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

AM Year 2035 Plus Project  
 AM Year 2035 Plus Project



| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     | 4     | 3     | 8     | 8     | 5     | 2     | 2     | 1     | 6     | 6     |
| Switch Phase            |       |       |       |       |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  | 38.0  | 10.0  | 40.0  | 40.0  | 10.0  | 47.0  | 47.0  | 10.0  | 49.0  | 49.0  |
| Total Split (s)         | 12.0  | 45.0  | 45.0  | 13.0  | 46.0  | 46.0  | 13.0  | 47.0  | 47.0  | 15.0  | 49.0  | 49.0  |
| Total Split (%)         | 10.0% | 37.5% | 37.5% | 10.8% | 38.3% | 38.3% | 10.8% | 39.2% | 39.2% | 12.5% | 40.8% | 40.8% |
| Maximum Green (s)       | 8.0   | 40.0  | 40.0  | 9.0   | 41.0  | 41.0  | 9.0   | 42.0  | 42.0  | 11.0  | 44.0  | 44.0  |
| Yellow Time (s)         | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max | C-Max | None  | C-Max | C-Max | None  | Max   | Max   | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   | 7.0   |       | 7.0   | 7.0   |       | 7.0   | 7.0   |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  | 26.0  |       | 28.0  | 28.0  |       | 35.0  | 35.0  |       | 37.0  | 37.0  |
| Pedestrian Calls (#/hr) |       | 2     | 2     |       | 2     | 2     |       | 2     | 2     |       | 2     | 2     |
| Act Effct Green (s)     | 8.0   | 40.0  | 40.0  | 9.0   | 41.0  | 41.0  | 8.7   | 42.0  | 42.0  | 11.0  | 44.3  | 44.3  |
| Actuated g/C Ratio      | 0.07  | 0.33  | 0.33  | 0.08  | 0.34  | 0.34  | 0.07  | 0.35  | 0.35  | 0.09  | 0.37  | 0.37  |
| v/c Ratio               | 1.01  | 0.69  | 0.17  | 0.52  | 1.04  | 0.27  | 0.61  | 0.18  | 0.21  | 1.04  | 0.28  | 0.37  |
| Control Delay           | 94.5  | 37.9  | 8.4   | 37.4  | 50.3  | 2.7   | 65.5  | 27.6  | 4.1   | 83.3  | 11.2  | 1.1   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 94.5  | 37.9  | 8.4   | 37.4  | 50.3  | 2.7   | 65.5  | 27.6  | 4.1   | 83.3  | 11.2  | 1.1   |
| LOS                     | F     | D     | A     | D     | D     | A     | E     | C     | A     | F     | B     | A     |
| Approach Delay          |       | 44.5  |       |       | 45.6  |       |       | 32.6  |       |       | 33.2  |       |
| Approach LOS            |       | D     |       |       | D     |       |       | C     |       |       | C     |       |
| Queue Length 50th (ft)  | ~85   | 322   | 8     | 41    | ~505  | 4     | 56    | 60    | 0     | ~134  | 32    | 1     |
| Queue Length 95th (ft)  | m#142 | 369   | m27   | m50   | #604  | m12   | 91    | 90    | 33    | m#169 | m38   | m0    |
| Internal Link Dist (ft) |       | 3546  |       |       | 3560  |       |       | 1062  |       |       | 3422  |       |
| Turn Bay Length (ft)    | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Base Capacity (vph)     | 216   | 1606  | 596   | 243   | 1646  | 615   | 243   | 1173  | 619   | 298   | 1237  | 667   |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.01  | 0.69  | 0.17  | 0.52  | 1.04  | 0.27  | 0.59  | 0.18  | 0.21  | 1.04  | 0.28  | 0.37  |

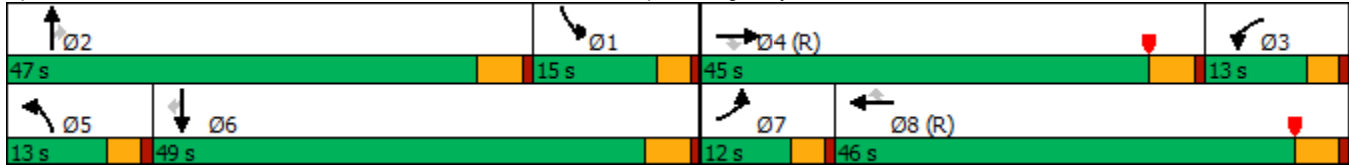
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 21 (18%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay: 41.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 72.3%  
 ICU Level of Service C  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Valencia Avenue/ Valencia Avenue & Imperial Highway



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

AM Year 2035 Plus Project  
AM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 44    | 1345  | 249   | 280   | 1569  | 598   | 267   | 240   | 152   | 944   | 590   | 37    |
| Future Volume (vph)        | 44    | 1345  | 249   | 280   | 1569  | 598   | 267   | 240   | 152   | 944   | 590   | 37    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.977 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4707  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4707  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 34    |       |       |       | 559   |       |       | 140   |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       |       | 1486  |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       |       | 33.8  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 44    | 1345  | 249   | 280   | 1569  | 598   | 267   | 240   | 152   | 944   | 590   | 37    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 44    | 1594  | 0     | 280   | 1569  | 598   | 267   | 240   | 152   | 944   | 590   | 37    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

AM Year 2035 Plus Project  
AM Year 2035 Plus Project



| Lane Group              | EBL  | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL    | SBT    | SBR   |
|-------------------------|------|-------|-----|-------|-------|-------|-------|-------|-------|--------|--------|-------|
| Detector Phase          | 7    | 4     |     | 3     | 8     | 8     | 5     | 2     | 2     | 1      | 6      | 6     |
| Switch Phase            |      |       |     |       |       |       |       |       |       |        |        |       |
| Minimum Initial (s)     | 6.0  | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0    | 6.0    | 6.0   |
| Minimum Split (s)       | 10.0 | 46.0  |     | 10.0  | 38.0  | 38.0  | 10.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (s)         | 10.0 | 46.0  |     | 10.0  | 46.0  | 46.0  | 16.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (%)         | 8.3% | 38.3% |     | 8.3%  | 38.3% | 38.3% | 13.3% | 45.0% | 45.0% | 8.3%   | 40.0%  | 40.0% |
| Maximum Green (s)       | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Yellow Time (s)         | 3.0  | 4.0   |     | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0    | 4.0    | 4.0   |
| All-Red Time (s)        | 1.0  | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    | 1.0    | 1.0   |
| Lost Time Adjust (s)    | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Lost Time (s)     | 4.0  | 5.0   |     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0    | 5.0    | 5.0   |
| Lead/Lag                | Lag  | Lag   |     | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead   | Lead   | Lead  |
| Lead-Lag Optimize?      | Yes  | Yes   |     | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes    | Yes    | Yes   |
| Vehicle Extension (s)   | 3.0  | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0    | 3.0    | 3.0   |
| Recall Mode             | None | C-Max |     | None  | C-Max | C-Max | None  | Max   | Max   | None   | Max    | Max   |
| Walk Time (s)           |      | 7.0   |     |       | 7.0   | 7.0   |       | 7.0   | 7.0   |        | 7.0    | 7.0   |
| Flash Dont Walk (s)     |      | 34.0  |     |       | 26.0  | 26.0  |       | 42.0  | 42.0  |        | 36.0   | 36.0  |
| Pedestrian Calls (#/hr) |      | 2     |     |       | 2     | 2     |       | 2     | 2     |        | 2      | 2     |
| Act Effct Green (s)     | 6.0  | 41.0  |     | 6.0   | 43.0  | 43.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Actuated g/C Ratio      | 0.05 | 0.34  |     | 0.05  | 0.36  | 0.36  | 0.10  | 0.41  | 0.41  | 0.05   | 0.36   | 0.36  |
| v/c Ratio               | 0.53 | 0.98  |     | 1.73  | 0.91  | 0.67  | 0.82  | 0.18  | 0.22  | 5.83   | 0.49   | 0.06  |
| Control Delay           | 43.9 | 24.2  |     | 386.0 | 46.1  | 7.7   | 73.7  | 23.1  | 5.3   | 2186.8 | 35.7   | 0.1   |
| Queue Delay             | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Delay             | 43.9 | 24.2  |     | 386.0 | 46.1  | 7.7   | 73.7  | 23.1  | 5.3   | 2186.8 | 35.7   | 0.1   |
| LOS                     | D    | C     |     | F     | D     | A     | E     | C     | A     | F      | D      | A     |
| Approach Delay          |      | 24.8  |     |       | 75.6  |       |       | 39.5  |       |        | 1327.4 |       |
| Approach LOS            |      | C     |     |       | E     |       |       | D     |       |        | F      |       |
| Queue Length 50th (ft)  | 29   | 44    |     | ~164  | 432   | 20    | 106   | 61    | 6     | ~726   | 173    | 0     |
| Queue Length 95th (ft)  | m44  | m#499 |     | #254  | #537  | 131   | #174  | 90    | 47    | m#750  | m188   | m0    |
| Internal Link Dist (ft) |      | 3560  |     |       | 1794  |       |       | 838   |       |        | 1406   |       |
| Turn Bay Length (ft)    | 220  |       |     | 230   |       | 270   | 135   |       | 100   | 185    |        | 50    |
| Base Capacity (vph)     | 83   | 1630  |     | 162   | 1726  | 896   | 325   | 1369  | 695   | 162    | 1201   | 630   |
| Starvation Cap Reductn  | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Spillback Cap Reductn   | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Storage Cap Reductn     | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Reduced v/c Ratio       | 0.53 | 0.98  |     | 1.73  | 0.91  | 0.67  | 0.82  | 0.18  | 0.22  | 5.83   | 0.49   | 0.06  |

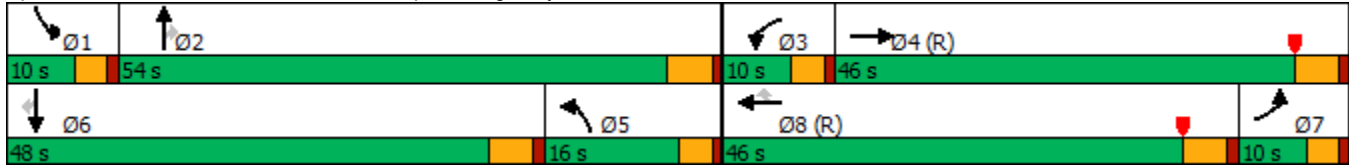
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 82 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 5.83  
 Intersection Signal Delay: 370.1  
 Intersection Capacity Utilization 92.2%  
 Analysis Period (min) 15  
 Intersection LOS: F  
 ICU Level of Service F

~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

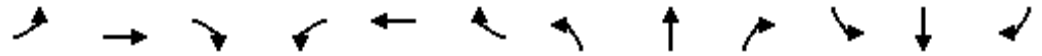
Splits and Phases: 22: Rose Drive & Imperial Highway





Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group                 | EBL  | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR   | SBL   | SBT  | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↗↗    | ↘↘    | ↑↑↑   |       |      |      |       | ↗↗    |      | ↗↗    |
| Traffic Volume (vph)       | 0    | 1480  | 835   | 265   | 1771  | 4     | 0    | 0    | 0     | 524   | 0    | 855   |
| Future Volume (vph)        | 0    | 1480  | 835   | 265   | 1771  | 4     | 0    | 0    | 0     | 524   | 0    | 855   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  | 1800  | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 0     | 70    |       | 0     | 0    |      | 0     | 0     |      | 0     |
| Storage Lanes              | 0    |       | 2     | 2     |       | 0     | 0    |      | 0     | 2     |      | 2     |
| Taper Length (ft)          | 90   |       |       | 90    |       |       | 90   |      |       | 90    |      |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.88  | 0.97  | 0.91  | 0.91  | 1.00 | 1.00 | 1.00  | 0.97  | 1.00 | 0.88  |
| Frt                        |      |       | 0.850 |       |       |       |      |      |       |       |      | 0.850 |
| Flt Protected              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (prot)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Flt Permitted              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (perm)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Right Turn on Red          |      |       | Yes   |       |       | Yes   |      |      | Yes   |       |      | Yes   |
| Satd. Flow (RTOR)          |      |       | 830   |       |       |       |      |      |       |       |      | 55    |
| Link Speed (mph)           |      | 45    |       |       | 45    |       |      | 30   |       |       | 30   |       |
| Link Distance (ft)         |      | 453   |       |       | 598   |       |      | 824  |       |       | 1360 |       |
| Travel Time (s)            |      | 6.9   |       |       | 9.1   |       |      | 18.7 |       |       | 30.9 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1480  | 835   | 265   | 1771  | 4     | 0    | 0    | 0     | 524   | 0    | 855   |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |      |      |       |       |      |       |
| Lane Group Flow (vph)      | 0    | 1480  | 835   | 265   | 1775  | 0     | 0    | 0    | 0     | 524   | 0    | 855   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    | No   | No   | No    | No    | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right | Left  | Left | Right |
| Median Width(ft)           |      | 24    |       |       | 24    |       |      | 24   |       |       | 24   |       |
| Link Offset(ft)            |      | 0     |       |       | 0     |       |      | 0    |       |       | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |       | 16    |       |      | 16   |       |       | 16   |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |      |      |       |       |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     | 15    |      | 9     |
| Number of Detectors        |      | 2     | 1     | 1     | 2     |       |      |      |       | 1     |      | 1     |
| Detector Template          |      | Thru  | Right | Left  | Thru  |       |      |      |       | Left  |      | Right |
| Leading Detector (ft)      |      | 100   | 20    | 20    | 100   |       |      |      |       | 20    |      | 20    |
| Trailing Detector (ft)     |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Size(ft)        |      | 6     | 20    | 20    | 6     |       |      |      |       | 20    |      | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |      |      |       | Cl+Ex |      | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 2 Position(ft)    |      | 94    |       |       | 94    |       |      |      |       |       |      |       |
| Detector 2 Size(ft)        |      | 6     |       |       | 6     |       |      |      |       |       |      |       |
| Detector 2 Type            |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |       |      |       |
| Detector 2 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |       | 0.0   |       |      |      |       |       |      |       |
| Turn Type                  |      | NA    | Perm  | Prot  | NA    |       |      |      |       | Prot  |      | Prot  |
| Protected Phases           |      | 2     |       | 1     | 6     |       |      |      |       | 4     |      | 4     |
| Permitted Phases           |      |       | 2     |       |       |       |      |      |       |       |      |       |

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group              | EBL | EBT   | EBR   | WBL   | WBT   | WBR | NBL | NBT | NBR | SBL   | SBT  | SBR   |
|-------------------------|-----|-------|-------|-------|-------|-----|-----|-----|-----|-------|------|-------|
| Detector Phase          |     | 2     | 2     | 1     | 6     |     |     |     |     | 4     |      | 4     |
| Switch Phase            |     |       |       |       |       |     |     |     |     |       |      |       |
| Minimum Initial (s)     |     | 5.0   | 5.0   | 5.0   | 5.0   |     |     |     |     | 5.0   |      | 5.0   |
| Minimum Split (s)       |     | 20.5  | 20.5  | 9.5   | 31.5  |     |     |     |     | 9.5   |      | 9.5   |
| Total Split (s)         |     | 51.0  | 51.0  | 18.0  | 69.0  |     |     |     |     | 51.0  |      | 51.0  |
| Total Split (%)         |     | 42.5% | 42.5% | 15.0% | 57.5% |     |     |     |     | 42.5% |      | 42.5% |
| Maximum Green (s)       |     | 46.5  | 46.5  | 13.5  | 64.5  |     |     |     |     | 46.5  |      | 46.5  |
| Yellow Time (s)         |     | 3.5   | 3.5   | 3.5   | 3.5   |     |     |     |     | 3.5   |      | 3.5   |
| All-Red Time (s)        |     | 1.0   | 1.0   | 1.0   | 1.0   |     |     |     |     | 1.0   |      | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |     |     |     | 0.0   |      | 0.0   |
| Total Lost Time (s)     |     | 4.5   | 4.5   | 4.5   | 4.5   |     |     |     |     | 4.5   |      | 4.5   |
| Lead/Lag                |     | Lead  | Lead  | Lag   |       |     |     |     |     |       |      |       |
| Lead-Lag Optimize?      |     | Yes   | Yes   | Yes   |       |     |     |     |     |       |      |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   | 3.0   | 3.0   |     |     |     |     | 3.0   |      | 3.0   |
| Recall Mode             |     | C-Max | C-Max | None  | C-Max |     |     |     |     | None  |      | None  |
| Walk Time (s)           |     | 7.0   | 7.0   |       | 7.0   |     |     |     |     |       |      |       |
| Flash Dont Walk (s)     |     | 9.0   | 9.0   |       | 20.0  |     |     |     |     |       |      |       |
| Pedestrian Calls (#/hr) |     | 2     | 2     |       | 2     |     |     |     |     |       |      |       |
| Act Effct Green (s)     |     | 50.3  | 50.3  | 13.5  | 68.3  |     |     |     |     | 42.7  |      | 42.7  |
| Actuated g/C Ratio      |     | 0.42  | 0.42  | 0.11  | 0.57  |     |     |     |     | 0.36  |      | 0.36  |
| v/c Ratio               |     | 0.73  | 0.53  | 0.73  | 0.65  |     |     |     |     | 0.45  |      | 0.88  |
| Control Delay           |     | 20.0  | 1.8   | 62.9  | 20.1  |     |     |     |     | 30.6  |      | 44.7  |
| Queue Delay             |     | 0.8   | 0.4   | 0.0   | 0.2   |     |     |     |     | 0.0   |      | 0.0   |
| Total Delay             |     | 20.8  | 2.3   | 62.9  | 20.3  |     |     |     |     | 30.6  |      | 44.7  |
| LOS                     |     | C     | A     | E     | C     |     |     |     |     | C     |      | D     |
| Approach Delay          |     | 14.1  |       |       | 25.8  |     |     |     |     |       |      | 39.3  |
| Approach LOS            |     | B     |       |       | C     |     |     |     |     |       |      | D     |
| Queue Length 50th (ft)  |     | 153   | 21    | 103   | 292   |     |     |     |     | 156   |      | 323   |
| Queue Length 95th (ft)  |     | m173  | m22   | #152  | 368   |     |     |     |     | 198   |      | 406   |
| Internal Link Dist (ft) |     | 373   |       |       | 518   |     |     | 744 |     |       | 1280 |       |
| Turn Bay Length (ft)    |     |       |       | 70    |       |     |     |     |     |       |      |       |
| Base Capacity (vph)     |     | 2020  | 1589  | 365   | 2743  |     |     |     |     | 1260  |      | 1056  |
| Starvation Cap Reductn  |     | 252   | 313   | 0     | 246   |     |     |     |     | 0     |      | 0     |
| Spillback Cap Reductn   |     | 0     | 0     | 0     | 32    |     |     |     |     | 0     |      | 0     |
| Storage Cap Reductn     |     | 0     | 0     | 0     | 0     |     |     |     |     | 0     |      | 0     |
| Reduced v/c Ratio       |     | 0.84  | 0.65  | 0.73  | 0.71  |     |     |     |     | 0.42  |      | 0.81  |

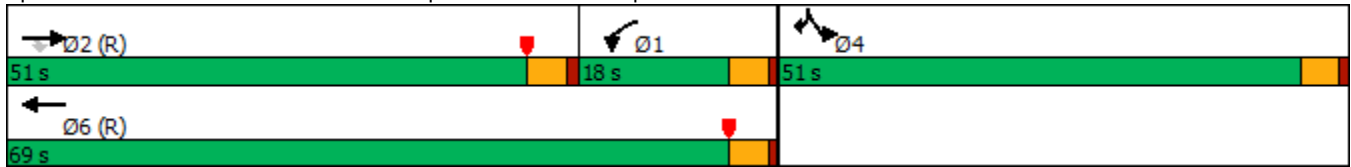
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 112 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.88  
 Intersection Signal Delay: 24.4  
 Intersection LOS: C  
 Intersection Capacity Utilization 75.3%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

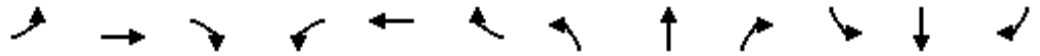
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road



Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT  | NBR   | SBL  | SBT  | SBR   |
|----------------------------|------|-------|-------|------|-------|-------|-------|------|-------|------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑     |      | ↑↑↑   | ↑     | ↑↑    |      | ↑     |      |      |       |
| Traffic Volume (vph)       | 0    | 1648  | 576   | 0    | 1186  | 570   | 676   | 0    | 329   | 0    | 0    | 0     |
| Future Volume (vph)        | 0    | 1648  | 576   | 0    | 1186  | 570   | 676   | 0    | 329   | 0    | 0    | 0     |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800 | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 100   | 0    |       | 0     | 215   |      | 0     | 0    |      | 0     |
| Storage Lanes              | 0    |       | 1     | 0    |       | 1     | 1     |      | 1     | 0    |      | 0     |
| Taper Length (ft)          | 90   |       |       | 90   |       |       | 90    |      |       | 90   |      |       |
| Lane Util. Factor          | 1.00 | 0.86  | 0.86  | 1.00 | 0.91  | 1.00  | 0.97  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Frt                        |      | 0.993 | 0.850 |      |       | 0.850 |       |      | 0.850 |      |      |       |
| Flt Protected              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (prot)          | 0    | 4521  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Flt Permitted              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (perm)          | 0    | 4521  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Right Turn on Red          |      |       | Yes   |      |       | Yes   |       |      | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |      | 9     | 283   |      |       | 433   |       |      | 19    |      |      |       |
| Link Speed (mph)           |      | 45    |       |      | 45    |       |       | 30   |       |      | 30   |       |
| Link Distance (ft)         |      | 598   |       |      | 654   |       |       | 831  |       |      | 1116 |       |
| Travel Time (s)            |      | 9.1   |       |      | 9.9   |       |       | 18.9 |       |      | 25.4 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1648  | 576   | 0    | 1186  | 570   | 676   | 0    | 329   | 0    | 0    | 0     |
| Shared Lane Traffic (%)    |      |       | 14%   |      |       |       |       |      |       |      |      |       |
| Lane Group Flow (vph)      | 0    | 1729  | 495   | 0    | 1186  | 570   | 676   | 0    | 329   | 0    | 0    | 0     |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No   | No    | No   | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left | Right | Left | Left | Right |
| Median Width(ft)           |      | 24    |       |      | 24    |       |       | 24   |       |      | 24   |       |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0    |       |      | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16   |       |      | 16   |       |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |      |       |      |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |      | 9     | 15   |      | 9     |
| Number of Detectors        |      | 2     | 1     |      | 2     | 1     | 1     |      | 1     |      |      |       |
| Detector Template          |      | Thru  | Right |      | Thru  | Right | Left  |      | Right |      |      |       |
| Leading Detector (ft)      |      | 100   | 20    |      | 100   | 20    | 20    |      | 20    |      |      |       |
| Trailing Detector (ft)     |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Position(ft)    |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Size(ft)        |      | 6     | 20    |      | 6     | 20    | 20    |      | 20    |      |      |       |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |      | Cl+Ex | Cl+Ex | Cl+Ex |      | Cl+Ex |      |      |       |
| Detector 1 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 2 Position(ft)    |      | 94    |       |      | 94    |       |       |      |       |      |      |       |
| Detector 2 Size(ft)        |      | 6     |       |      | 6     |       |       |      |       |      |      |       |
| Detector 2 Type            |      | Cl+Ex |       |      | Cl+Ex |       |       |      |       |      |      |       |
| Detector 2 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |      | 0.0   |       |       |      |       |      |      |       |
| Turn Type                  |      | NA    | Perm  |      | NA    | Free  | Prot  |      | Perm  |      |      |       |
| Protected Phases           |      | 2     |       |      | 6     |       | 3     |      |       |      |      |       |
| Permitted Phases           |      |       | 2     |      |       | Free  |       |      | 3     |      |      |       |

Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group              | EBL | EBT   | EBR   | WBL | WBT   | WBR   | NBL   | NBT  | NBR   | SBL | SBT  | SBR |
|-------------------------|-----|-------|-------|-----|-------|-------|-------|------|-------|-----|------|-----|
| Detector Phase          |     | 2     | 2     |     | 6     |       | 3     |      | 3     |     |      |     |
| Switch Phase            |     |       |       |     |       |       |       |      |       |     |      |     |
| Minimum Initial (s)     |     | 5.0   | 5.0   |     | 5.0   |       | 5.0   |      | 5.0   |     |      |     |
| Minimum Split (s)       |     | 36.5  | 36.5  |     | 20.5  |       | 23.5  |      | 23.5  |     |      |     |
| Total Split (s)         |     | 71.0  | 71.0  |     | 71.0  |       | 49.0  |      | 49.0  |     |      |     |
| Total Split (%)         |     | 59.2% | 59.2% |     | 59.2% |       | 40.8% |      | 40.8% |     |      |     |
| Maximum Green (s)       |     | 66.5  | 66.5  |     | 66.5  |       | 44.5  |      | 44.5  |     |      |     |
| Yellow Time (s)         |     | 3.5   | 3.5   |     | 3.5   |       | 3.5   |      | 3.5   |     |      |     |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   |       | 1.0   |      | 1.0   |     |      |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   |       | 0.0   |      | 0.0   |     |      |     |
| Total Lost Time (s)     |     | 4.5   | 4.5   |     | 4.5   |       | 4.5   |      | 4.5   |     |      |     |
| Lead/Lag                |     |       |       |     |       |       |       |      |       |     |      |     |
| Lead-Lag Optimize?      |     |       |       |     |       |       |       |      |       |     |      |     |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   |       | 3.0   |      | 3.0   |     |      |     |
| Recall Mode             |     | C-Max | C-Max |     | C-Max |       | None  |      | None  |     |      |     |
| Walk Time (s)           |     | 7.0   | 7.0   |     |       |       |       |      |       |     |      |     |
| Flash Dont Walk (s)     |     | 25.0  | 25.0  |     |       |       |       |      |       |     |      |     |
| Pedestrian Calls (#/hr) |     | 2     | 2     |     |       |       |       |      |       |     |      |     |
| Act Effct Green (s)     |     | 78.2  | 78.2  |     | 78.2  | 120.0 | 32.8  |      | 32.8  |     |      |     |
| Actuated g/C Ratio      |     | 0.65  | 0.65  |     | 0.65  | 1.00  | 0.27  |      | 0.27  |     |      |     |
| v/c Ratio               |     | 0.59  | 0.53  |     | 0.38  | 0.38  | 0.76  |      | 0.78  |     |      |     |
| Control Delay           |     | 7.1   | 4.6   |     | 3.1   | 0.5   | 45.3  |      | 50.1  |     |      |     |
| Queue Delay             |     | 0.2   | 0.4   |     | 0.0   | 0.0   | 0.0   |      | 0.0   |     |      |     |
| Total Delay             |     | 7.3   | 5.0   |     | 3.1   | 0.5   | 45.3  |      | 50.1  |     |      |     |
| LOS                     |     | A     | A     |     | A     | A     | D     |      | D     |     |      |     |
| Approach Delay          |     | 6.8   |       |     | 2.3   |       |       | 46.9 |       |     |      |     |
| Approach LOS            |     | A     |       |     | A     |       |       | D    |       |     |      |     |
| Queue Length 50th (ft)  |     | 139   | 54    |     | 42    | 0     | 249   |      | 224   |     |      |     |
| Queue Length 95th (ft)  |     | 172   | 79    |     | 68    | m0    | 279   |      | 298   |     |      |     |
| Internal Link Dist (ft) |     | 518   |       |     | 574   |       |       | 751  |       |     | 1036 |     |
| Turn Bay Length (ft)    |     |       | 100   |     |       |       | 215   |      |       |     |      |     |
| Base Capacity (vph)     |     | 2948  | 938   |     | 3139  | 1500  | 1205  |      | 568   |     |      |     |
| Starvation Cap Reductn  |     | 415   | 130   |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Spillback Cap Reductn   |     | 138   | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Reduced v/c Ratio       |     | 0.68  | 0.61  |     | 0.38  | 0.38  | 0.56  |      | 0.58  |     |      |     |

Intersection Summary

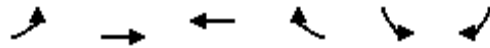
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 13.3  
 Intersection LOS: B  
 Intersection Capacity Utilization 67.1%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

|                  |              |
|------------------|--------------|
| → Ø2 (R)<br>71 s | ↖ Ø3<br>49 s |
| ← Ø6 (R)<br>71 s |              |

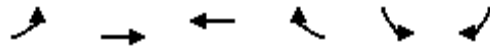
Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SBL   | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑↑   |       | ↓↓↓   | ↓     |
| Traffic Volume (vph)       | 0    | 1912  | 2632  | 0     | 735   | 605   |
| Future Volume (vph)        | 0    | 1912  | 2632  | 0     | 735   | 605   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 0    |       |       | 0     | 0     | 260   |
| Storage Lanes              | 0    |       |       | 0     | 2     | 1     |
| Taper Length (ft)          | 90   |       |       |       | 90    |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.91  | 1.00  | 0.97  | 0.91  |
| Frt                        |      |       |       |       | 0.969 | 0.850 |
| Flt Protected              |      |       |       |       | 0.962 |       |
| Satd. Flow (prot)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Flt Permitted              |      |       |       |       | 0.962 |       |
| Satd. Flow (perm)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Right Turn on Red          |      |       |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |      |       |       |       | 2     | 2     |
| Link Speed (mph)           |      | 45    | 45    |       | 30    |       |
| Link Distance (ft)         |      | 293   | 273   |       | 775   |       |
| Travel Time (s)            |      | 4.4   | 4.1   |       | 17.6  |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 0    | 1912  | 2632  | 0     | 735   | 605   |
| Shared Lane Traffic (%)    |      |       |       |       |       | 31%   |
| Lane Group Flow (vph)      | 0    | 1912  | 2632  | 0     | 923   | 417   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |
| Median Width(ft)           |      | 0     | 0     |       | 24    |       |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    | 16    |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |
| Number of Detectors        |      | 2     | 2     |       | 1     | 1     |
| Detector Template          |      | Thru  | Thru  |       | Left  | Right |
| Leading Detector (ft)      |      | 100   | 100   |       | 20    | 20    |
| Trailing Detector (ft)     |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        |      | 6     | 6     |       | 20    | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |      | 94    | 94    |       |       |       |
| Detector 2 Size(ft)        |      | 6     | 6     |       |       |       |
| Detector 2 Type            |      | Cl+Ex | Cl+Ex |       |       |       |
| Detector 2 Channel         |      |       |       |       |       |       |
| Detector 2 Extend (s)      |      | 0.0   | 0.0   |       |       |       |
| Turn Type                  |      | NA    | NA    |       | Prot  | Prot  |
| Protected Phases           |      | 4     | 8     |       | 6     | 6     |
| Permitted Phases           |      |       |       |       |       |       |

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp



| Lane Group              | EBL | EBT   | WBT   | WBR | SBL   | SBR   |
|-------------------------|-----|-------|-------|-----|-------|-------|
| Detector Phase          |     | 4     | 8     |     | 6     | 6     |
| Switch Phase            |     |       |       |     |       |       |
| Minimum Initial (s)     |     | 6.0   | 6.0   |     | 6.0   | 6.0   |
| Minimum Split (s)       |     | 11.0  | 25.0  |     | 11.0  | 11.0  |
| Total Split (s)         |     | 39.0  | 39.0  |     | 21.0  | 21.0  |
| Total Split (%)         |     | 65.0% | 65.0% |     | 35.0% | 35.0% |
| Maximum Green (s)       |     | 34.0  | 34.0  |     | 16.0  | 16.0  |
| Yellow Time (s)         |     | 4.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     |     | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Lead/Lag                |     |       |       |     |       |       |
| Lead-Lag Optimize?      |     |       |       |     |       |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             |     | C-Max | C-Max |     | Max   | Max   |
| Walk Time (s)           |     |       | 7.0   |     |       |       |
| Flash Dont Walk (s)     |     |       | 13.0  |     |       |       |
| Pedestrian Calls (#/hr) |     |       | 2     |     |       |       |
| Act Effct Green (s)     |     | 34.0  | 34.0  |     | 16.0  | 16.0  |
| Actuated g/C Ratio      |     | 0.57  | 0.57  |     | 0.27  | 0.27  |
| v/c Ratio               |     | 0.70  | 0.96  |     | 1.08  | 1.14  |
| Control Delay           |     | 11.1  | 14.7  |     | 80.7  | 117.6 |
| Queue Delay             |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             |     | 11.1  | 14.7  |     | 80.7  | 117.6 |
| LOS                     |     | B     | B     |     | F     | F     |
| Approach Delay          |     | 11.1  | 14.7  |     | 92.2  |       |
| Approach LOS            |     | B     | B     |     | F     |       |
| Queue Length 50th (ft)  |     | 161   | 313   |     | ~200  | ~201  |
| Queue Length 95th (ft)  |     | 209   | m287  |     | #306  | #371  |
| Internal Link Dist (ft) |     | 213   | 193   |     | 695   |       |
| Turn Bay Length (ft)    |     |       |       |     |       | 260   |
| Base Capacity (vph)     |     | 2730  | 2730  |     | 852   | 365   |
| Starvation Cap Reductn  |     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   |     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       |     | 0.70  | 0.96  |     | 1.08  | 1.14  |

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 9 (15%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.14  
 Intersection Signal Delay: 31.2  
 Intersection LOS: C  
 Intersection Capacity Utilization 144.0%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

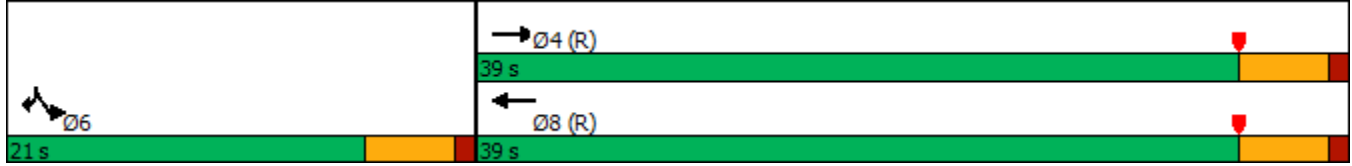


Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project

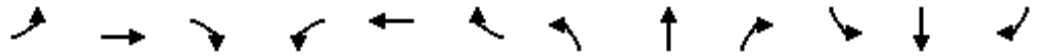
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Imperial Highway & SR-57 SB Off-Ramp



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT   | NBR   | SBL  | SBT  | SBR   |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|-------|
| Lane Configurations        | ↘     | ↑↑↑   |       |      | ↑↑↑   |       | ↘↘    | ↔     | ↘     |      |      | ↘↘    |
| Traffic Volume (vph)       | 205   | 2060  | 0     | 0    | 2707  | 43    | 1110  | 72    | 495   | 0    | 0    | 217   |
| Future Volume (vph)        | 205   | 2060  | 0     | 0    | 2707  | 43    | 1110  | 72    | 495   | 0    | 0    | 217   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 260   |       | 0     | 0    |       | 0     | 610   |       | 350   | 0    |      | 0     |
| Storage Lanes              | 1     |       | 0     | 0    |       | 0     | 1     |       | 1     | 0    |      | 2     |
| Taper Length (ft)          | 90    |       |       | 90   |       |       | 90    |       |       | 90   |      |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00 | 0.86  | 0.86  | 0.91  | 0.86  | 0.95  | 1.00 | 1.00 | 0.88  |
| Frt                        |       |       |       |      | 0.998 |       |       | 0.964 | 0.850 |      |      | 0.850 |
| Flt Protected              | 0.950 |       |       |      |       |       | 0.950 | 0.971 |       |      |      |       |
| Satd. Flow (prot)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1421  | 1425  | 0    | 0    | 2640  |
| Flt Permitted              | 0.950 |       |       |      |       |       | 0.950 | 0.971 |       |      |      |       |
| Satd. Flow (perm)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1421  | 1425  | 0    | 0    | 2640  |
| Right Turn on Red          |       |       | Yes   |      |       | Yes   |       |       | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |       |       |       |      | 3     |       |       | 13    | 101   |      |      | 245   |
| Link Speed (mph)           |       | 45    |       |      | 45    |       |       | 30    |       |      |      | 30    |
| Link Distance (ft)         |       | 271   |       |      | 540   |       |       | 932   |       |      |      | 494   |
| Travel Time (s)            |       | 4.1   |       |      | 8.2   |       |       | 21.2  |       |      |      | 11.2  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 205   | 2060  | 0     | 0    | 2707  | 43    | 1110  | 72    | 495   | 0    | 0    | 217   |
| Shared Lane Traffic (%)    |       |       |       |      |       |       | 23%   |       | 21%   |      |      |       |
| Lane Group Flow (vph)      | 205   | 2060  | 0     | 0    | 2750  | 0     | 855   | 431   | 391   | 0    | 0    | 217   |
| Enter Blocked Intersection | No    | No    | No    | No   | No    | No    | No    | No    | No    | No   | No   | No    |
| Lane Alignment             | Left  | Left  | Right | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right |
| Median Width(ft)           |       | 12    |       |      | 12    |       |       | 24    |       |      |      | 24    |
| Link Offset(ft)            |       | 0     |       |      | 0     |       |       | 0     |       |      |      | 0     |
| Crosswalk Width(ft)        |       | 16    |       |      | 16    |       |       | 16    |       |      |      | 16    |
| Two way Left Turn Lane     |       |       |       |      |       |       |       |       |       |      |      |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     |
| Number of Detectors        | 1     | 2     |       |      | 2     |       | 1     | 2     | 1     |      |      | 1     |
| Detector Template          | Left  | Thru  |       |      | Thru  |       | Left  | Thru  | Right |      |      | Right |
| Leading Detector (ft)      | 20    | 100   |       |      | 100   |       | 20    | 100   | 20    |      |      | 20    |
| Trailing Detector (ft)     | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       |      | 6     |       | 20    | 6     | 20    |      |      | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       |      | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |      |      | Cl+Ex |
| Detector 1 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |      | 94    |       |       | 94    |       |      |      |       |
| Detector 2 Size(ft)        |       | 6     |       |      | 6     |       |       | 6     |       |      |      |       |
| Detector 2 Type            |       | Cl+Ex |       |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |
| Detector 2 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 2 Extend (s)      |       | 0.0   |       |      | 0.0   |       |       | 0.0   |       |      |      |       |
| Turn Type                  | Prot  | NA    |       |      | NA    |       | Split | NA    | Prot  |      |      | Prot  |
| Protected Phases           | 7     | 4     |       |      | 8     |       | 2     | 2     | 2     |      |      | 1     |
| Permitted Phases           |       |       |       |      |       |       |       |       |       |      |      |       |

Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL | WBT   | WBR | NBL   | NBT   | NBR   | SBL | SBT | SBR  |
|-------------------------|-------|-------|-----|-----|-------|-----|-------|-------|-------|-----|-----|------|
| Detector Phase          | 7     | 4     |     |     | 8     |     | 2     | 2     | 2     |     |     | 1    |
| Switch Phase            |       |       |     |     |       |     |       |       |       |     |     |      |
| Minimum Initial (s)     | 6.0   | 6.0   |     |     | 6.0   |     | 6.0   | 6.0   | 6.0   |     |     | 6.0  |
| Minimum Split (s)       | 10.0  | 32.0  |     |     | 28.0  |     | 11.0  | 11.0  | 11.0  |     |     | 11.0 |
| Total Split (s)         | 16.0  | 72.0  |     |     | 56.0  |     | 37.0  | 37.0  | 37.0  |     |     | 11.0 |
| Total Split (%)         | 13.3% | 60.0% |     |     | 46.7% |     | 30.8% | 30.8% | 30.8% |     |     | 9.2% |
| Maximum Green (s)       | 12.0  | 67.0  |     |     | 51.0  |     | 32.0  | 32.0  | 32.0  |     |     | 6.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     |     | 4.0   |     | 4.0   | 4.0   | 4.0   |     |     | 4.0  |
| All-Red Time (s)        | 1.0   | 1.0   |     |     | 1.0   |     | 1.0   | 1.0   | 1.0   |     |     | 1.0  |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0  |
| Total Lost Time (s)     | 4.0   | 5.0   |     |     | 5.0   |     | 5.0   | 5.0   | 5.0   |     |     | 5.0  |
| Lead/Lag                | Lead  |       |     |     | Lag   |     | Lag   | Lag   | Lag   |     |     | Lead |
| Lead-Lag Optimize?      | Yes   |       |     |     | Yes   |     | Yes   | Yes   | Yes   |     |     | Yes  |
| Vehicle Extension (s)   | 3.0   | 3.0   |     |     | 3.0   |     | 3.0   | 3.0   | 3.0   |     |     | 3.0  |
| Recall Mode             | None  | C-Max |     |     | C-Max |     | Max   | Max   | Max   |     |     | None |
| Walk Time (s)           |       | 7.0   |     |     | 7.0   |     |       |       |       |     |     |      |
| Flash Dont Walk (s)     |       | 20.0  |     |     | 16.0  |     |       |       |       |     |     |      |
| Pedestrian Calls (#/hr) |       | 2     |     |     | 2     |     |       |       |       |     |     |      |
| Act Effct Green (s)     | 12.0  | 67.0  |     |     | 51.0  |     | 32.0  | 32.0  | 32.0  |     |     | 6.0  |
| Actuated g/C Ratio      | 0.10  | 0.56  |     |     | 0.42  |     | 0.27  | 0.27  | 0.27  |     |     | 0.05 |
| v/c Ratio               | 1.23  | 0.77  |     |     | 1.07  |     | 1.05  | 1.11  | 0.86  |     |     | 0.60 |
| Control Delay           | 170.9 | 19.5  |     |     | 42.6  |     | 88.7  | 119.2 | 50.5  |     |     | 11.6 |
| Queue Delay             | 0.0   | 47.7  |     |     | 13.9  |     | 0.0   | 0.1   | 2.9   |     |     | 0.0  |
| Total Delay             | 170.9 | 67.2  |     |     | 56.5  |     | 88.7  | 119.3 | 53.4  |     |     | 11.6 |
| LOS                     | F     | E     |     |     | E     |     | F     | F     | D     |     |     | B    |
| Approach Delay          |       | 76.6  |     |     | 56.5  |     |       | 88.3  |       |     |     | 11.6 |
| Approach LOS            |       | E     |     |     | E     |     |       | F     |       |     |     | B    |
| Queue Length 50th (ft)  | ~196  | 399   |     |     | ~661  |     | ~396  | ~436  | 233   |     |     | 0    |
| Queue Length 95th (ft)  | m#290 | m441  |     |     | m133  |     | #530  | #674  | #420  |     |     | 30   |
| Internal Link Dist (ft) |       | 191   |     |     | 460   |     |       | 852   |       |     |     | 414  |
| Turn Bay Length (ft)    | 260   |       |     |     |       |     | 610   |       | 350   |     |     |      |
| Base Capacity (vph)     | 167   | 2690  |     |     | 2576  |     | 813   | 388   | 454   |     |     | 364  |
| Starvation Cap Reductn  | 0     | 0     |     |     | 89    |     | 0     | 0     | 0     |     |     | 0    |
| Spillback Cap Reductn   | 0     | 1027  |     |     | 0     |     | 0     | 2     | 21    |     |     | 0    |
| Storage Cap Reductn     | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0    |
| Reduced v/c Ratio       | 1.23  | 1.24  |     |     | 1.11  |     | 1.05  | 1.12  | 0.90  |     |     | 0.60 |

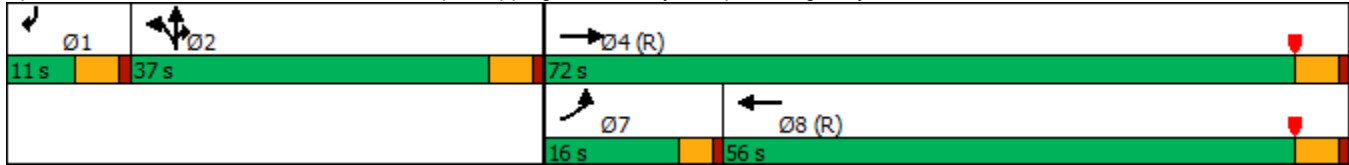
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 12 (10%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.23  
 Intersection Signal Delay: 69.4  
 Intersection Capacity Utilization 92.3%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service F

~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway



Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

PM Year 2035 Plus Project  
PM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 296   | 2105  | 153   | 192   | 1988  | 203   | 240   | 295   | 93    | 320   | 389   | 280   |
| Future Volume (vph)        | 296   | 2105  | 153   | 192   | 1988  | 203   | 240   | 295   | 93    | 320   | 389   | 280   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 340   |       | 0     | 200   |       | 0     | 170   |       | 0     | 210   |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 1.00  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 1.00  | 1.00  |
| Frt                        |       | 0.990 |       |       | 0.986 |       |       | 0.964 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4769  | 0     | 1676  | 4750  | 0     | 3252  | 3232  | 0     | 3252  | 1765  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4769  | 0     | 1676  | 4750  | 0     | 3252  | 3232  | 0     | 3252  | 1765  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 11    |       |       | 16    |       |       | 35    |       |       |       | 234   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 540   |       |       | 1433  |       |       | 1004  |       |       |       | 3109  |
| Travel Time (s)            |       | 12.3  |       |       | 32.6  |       |       | 22.8  |       |       |       | 70.7  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 296   | 2105  | 153   | 192   | 1988  | 203   | 240   | 295   | 93    | 320   | 389   | 280   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 296   | 2258  | 0     | 192   | 2191  | 0     | 240   | 388   | 0     | 320   | 389   | 280   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 12    |       |       | 12    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

PM Year 2035 Plus Project  
PM Year 2035 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 37.0  |     | 10.0  | 40.0  |     | 10.0  | 41.0  | 41.0  |
| Total Split (s)         | 18.0  | 53.0  |     | 14.0  | 49.0  |     | 12.0  | 40.0  |     | 13.0  | 41.0  | 41.0  |
| Total Split (%)         | 15.0% | 44.2% |     | 11.7% | 40.8% |     | 10.0% | 33.3% |     | 10.8% | 34.2% | 34.2% |
| Maximum Green (s)       | 14.0  | 48.0  |     | 10.0  | 44.0  |     | 8.0   | 35.0  |     | 9.0   | 36.0  | 36.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 25.0  |     |       | 28.0  |     |       | 29.0  | 29.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 14.0  | 48.0  |     | 10.0  | 44.0  |     | 8.0   | 35.0  |     | 9.0   | 36.0  | 36.0  |
| Actuated g/C Ratio      | 0.12  | 0.40  |     | 0.08  | 0.37  |     | 0.07  | 0.29  |     | 0.08  | 0.30  | 0.30  |
| v/c Ratio               | 1.52  | 1.18  |     | 1.38  | 1.25  |     | 1.11  | 0.40  |     | 1.32  | 0.74  | 0.46  |
| Control Delay           | 278.8 | 108.6 |     | 236.1 | 142.6 |     | 145.1 | 32.3  |     | 195.5 | 23.9  | 3.2   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.5   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 278.8 | 108.6 |     | 236.1 | 143.0 |     | 145.1 | 32.3  |     | 195.5 | 23.9  | 3.3   |
| LOS                     | F     | F     |     | F     | F     |     | F     | C     |     | F     | C     | A     |
| Approach Delay          |       | 128.3 |     |       | 150.5 |     |       | 75.4  |     |       | 73.6  |       |
| Approach LOS            |       | F     |     |       | F     |     |       | E     |     |       | E     |       |
| Queue Length 50th (ft)  | ~318  | ~757  |     | ~195  | ~775  |     | ~109  | 115   |     | ~169  | 179   | 19    |
| Queue Length 95th (ft)  | m#452 | m#850 |     | m#300 | #881  |     | #194  | 161   |     | m#175 | m181  | m21   |
| Internal Link Dist (ft) |       | 460   |     |       | 1353  |     |       | 924   |     |       | 3029  |       |
| Turn Bay Length (ft)    | 340   |       |     | 200   |       |     | 170   |       |     | 210   |       |       |
| Base Capacity (vph)     | 195   | 1914  |     | 139   | 1751  |     | 216   | 967   |     | 243   | 529   | 613   |
| Starvation Cap Reductn  | 0     | 25    |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 232   |     | 0     | 0     |     | 0     | 0     | 10    |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.52  | 1.20  |     | 1.38  | 1.44  |     | 1.11  | 0.40  |     | 1.32  | 0.74  | 0.46  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 4 (3%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.52  
 Intersection Signal Delay: 123.1 Intersection LOS: F  
 Intersection Capacity Utilization 106.5% ICU Level of Service G  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

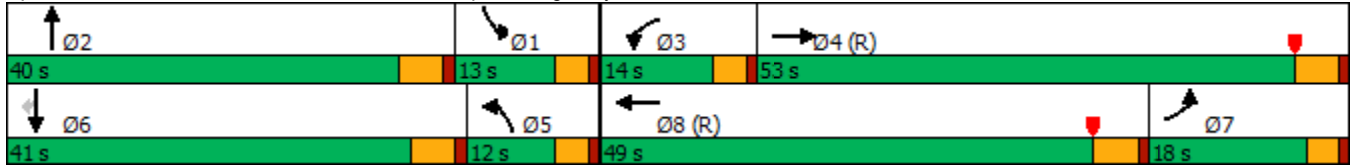
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

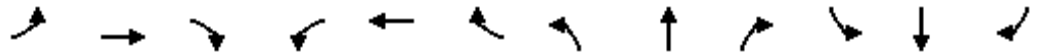
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Associated Road & Imperial Highway



Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↖     | ↑↑↑   | ↗     | ↖     | ↑↑↑   |       | ↖     | ↖     | ↗     | ↖     | ↗     |       |
| Traffic Volume (vph)       | 21    | 2122  | 308   | 255   | 2176  | 63    | 276   | 51    | 295   | 28    | 25    | 15    |
| Future Volume (vph)        | 21    | 2122  | 308   | 255   | 2176  | 63    | 276   | 51    | 295   | 28    | 25    | 15    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 140   |       | 200   | 225   |       | 0     | 195   |       | 0     | 85    |       | 0     |
| Storage Lanes              | 1     |       | 1     | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00  | 0.91  | 0.91  | 0.95  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       |       | 0.850 |       | 0.996 |       |       |       | 0.850 |       | 0.944 |       |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.967 |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4818  | 1500  | 1676  | 4798  | 0     | 1593  | 1621  | 1500  | 1676  | 1666  | 0     |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.967 |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4818  | 1500  | 1676  | 4798  | 0     | 1593  | 1621  | 1500  | 1676  | 1666  | 0     |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 195   |       | 6     |       |       |       | 295   |       | 15    |       |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 1433  |       |       | 3487  |       |       | 2609  |       |       | 962   |       |
| Travel Time (s)            |       | 32.6  |       |       | 79.3  |       |       | 59.3  |       |       | 21.9  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 21    | 2122  | 308   | 255   | 2176  | 63    | 276   | 51    | 295   | 28    | 25    | 15    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       | 41%   |       |       |       |       |       |
| Lane Group Flow (vph)      | 21    | 2122  | 308   | 255   | 2239  | 0     | 163   | 164   | 295   | 28    | 40    | 0     |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 12    |       |       | 12    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    |       | Split | NA    | Perm  | Split | NA    |       |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       |       |       |       | 2     |       |       |       |



Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group              | EBL  | EBT   | EBR   | WBL   | WBT   | WBR | NBL   | NBT   | NBR   | SBL  | SBT  | SBR |
|-------------------------|------|-------|-------|-------|-------|-----|-------|-------|-------|------|------|-----|
| Detector Phase          | 7    | 4     | 4     | 3     | 8     |     | 2     | 2     | 2     | 6    | 6    |     |
| Switch Phase            |      |       |       |       |       |     |       |       |       |      |      |     |
| Minimum Initial (s)     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0  | 6.0  |     |
| Minimum Split (s)       | 10.0 | 33.0  | 33.0  | 10.0  | 26.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (s)         | 10.0 | 59.0  | 59.0  | 23.0  | 72.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (%)         | 8.3% | 49.2% | 49.2% | 19.2% | 60.0% |     | 22.5% | 22.5% | 22.5% | 9.2% | 9.2% |     |
| Maximum Green (s)       | 6.0  | 54.0  | 54.0  | 19.0  | 67.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Yellow Time (s)         | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   |     | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |     |
| All-Red Time (s)        | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0  | 1.0  |     |
| Lost Time Adjust (s)    | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Lost Time (s)     | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   |     | 5.0   | 5.0   | 5.0   | 5.0  | 5.0  |     |
| Lead/Lag                | Lead | Lead  | Lead  | Lag   | Lag   |     |       |       |       |      |      |     |
| Lead-Lag Optimize?      | Yes  | Yes   | Yes   | Yes   | Yes   |     |       |       |       |      |      |     |
| Vehicle Extension (s)   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |     |
| Recall Mode             | None | C-Max | C-Max | None  | C-Max |     | Max   | Max   | Max   | Max  | Max  |     |
| Walk Time (s)           |      | 7.0   | 7.0   |       | 7.0   |     | 7.0   | 7.0   | 7.0   |      |      |     |
| Flash Dont Walk (s)     |      | 21.0  | 21.0  |       | 14.0  |     | 15.0  | 15.0  | 15.0  |      |      |     |
| Pedestrian Calls (#/hr) |      | 2     | 2     |       | 2     |     | 2     | 2     | 2     |      |      |     |
| Act Effct Green (s)     | 6.0  | 54.0  | 54.0  | 19.0  | 73.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Actuated g/C Ratio      | 0.05 | 0.45  | 0.45  | 0.16  | 0.61  |     | 0.18  | 0.18  | 0.18  | 0.05 | 0.05 |     |
| v/c Ratio               | 0.25 | 0.98  | 0.39  | 0.96  | 0.77  |     | 0.56  | 0.55  | 0.57  | 0.34 | 0.41 |     |
| Control Delay           | 81.9 | 10.3  | 1.1   | 60.7  | 3.4   |     | 52.9  | 52.5  | 9.6   | 66.4 | 51.9 |     |
| Queue Delay             | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Delay             | 81.9 | 10.3  | 1.1   | 60.7  | 3.4   |     | 52.9  | 52.5  | 9.6   | 66.4 | 51.9 |     |
| LOS                     | F    | B     | A     | E     | A     |     | D     | D     | A     | E    | D    |     |
| Approach Delay          |      | 9.8   |       |       | 9.3   |     |       | 32.3  |       |      | 57.8 |     |
| Approach LOS            |      | A     |       |       | A     |     |       | C     |       |      | E    |     |
| Queue Length 50th (ft)  | 17   | 107   | 9     | 188   | 46    |     | 122   | 123   | 0     | 21   | 19   |     |
| Queue Length 95th (ft)  | m16  | m90   | m6    | m#205 | m105  |     | 200   | 200   | 80    | 53   | 56   |     |
| Internal Link Dist (ft) |      | 1353  |       |       | 3407  |     |       | 2529  |       |      | 882  |     |
| Turn Bay Length (ft)    | 140  |       | 200   | 225   |       |     | 195   |       |       | 85   |      |     |
| Base Capacity (vph)     | 83   | 2168  | 782   | 265   | 2920  |     | 292   | 297   | 515   | 83   | 97   |     |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Spillback Cap Reductn   | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Storage Cap Reductn     | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Reduced v/c Ratio       | 0.25 | 0.98  | 0.39  | 0.96  | 0.77  |     | 0.56  | 0.55  | 0.57  | 0.34 | 0.41 |     |

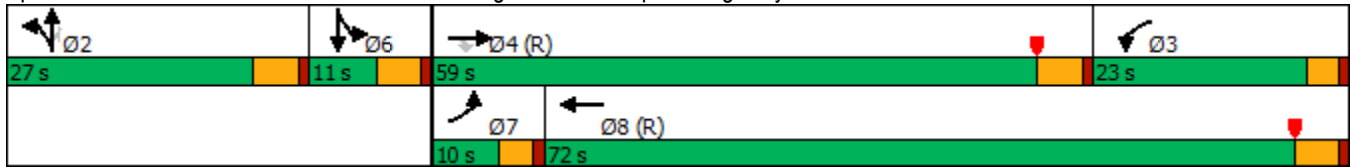
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 55 (46%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 105  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.98  
 Intersection Signal Delay: 12.6 Intersection LOS: B  
 Intersection Capacity Utilization 86.0% ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

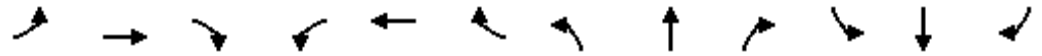
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Placentia Avenue/Castlegate Lane & Imperial Highway



Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

PM Year 2035 Plus Project  
PM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 236   | 1600  | 239   | 201   | 1745  | 347   | 398   | 702   | 112   | 286   | 535   | 128   |
| Future Volume (vph)        | 236   | 1600  | 239   | 201   | 1745  | 347   | 398   | 702   | 112   | 286   | 535   | 128   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 185   |       | 0     | 220   |       | 0     | 150   |       | 0     | 205   |       | 0     |
| Storage Lanes              | 2     |       | 0     | 2     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 0.91  | 0.97  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.981 |       |       | 0.975 |       |       | 0.979 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4726  | 0     | 3252  | 4697  | 0     | 3252  | 3283  | 0     | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4726  | 0     | 3252  | 4697  | 0     | 3252  | 3283  | 0     | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 29    |       |       | 44    |       |       | 14    |       |       |       | 136   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3487  |       |       | 3626  |       |       | 1318  |       |       |       | 1319  |
| Travel Time (s)            |       | 79.3  |       |       | 82.4  |       |       | 30.0  |       |       |       | 30.0  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 236   | 1600  | 239   | 201   | 1745  | 347   | 398   | 702   | 112   | 286   | 535   | 128   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 236   | 1839  | 0     | 201   | 2092  | 0     | 398   | 814   | 0     | 286   | 535   | 128   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

PM Year 2035 Plus Project  
PM Year 2035 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 40.0  |     | 10.0  | 31.0  |     | 10.0  | 31.0  | 31.0  |
| Total Split (s)         | 13.0  | 56.0  |     | 14.0  | 57.0  |     | 19.0  | 35.0  |     | 15.0  | 31.0  | 31.0  |
| Total Split (%)         | 10.8% | 46.7% |     | 11.7% | 47.5% |     | 15.8% | 29.2% |     | 12.5% | 25.8% | 25.8% |
| Maximum Green (s)       | 9.0   | 51.0  |     | 10.0  | 52.0  |     | 15.0  | 30.0  |     | 11.0  | 26.0  | 26.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 28.0  |     |       | 19.0  |     |       | 19.0  | 19.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 9.0   | 51.1  |     | 9.9   | 52.0  |     | 15.0  | 30.0  |     | 11.0  | 26.0  | 26.0  |
| Actuated g/C Ratio      | 0.08  | 0.43  |     | 0.08  | 0.43  |     | 0.12  | 0.25  |     | 0.09  | 0.22  | 0.22  |
| v/c Ratio               | 0.97  | 0.91  |     | 0.75  | 1.02  |     | 0.98  | 0.98  |     | 0.96  | 0.74  | 0.30  |
| Control Delay           | 60.7  | 10.3  |     | 91.1  | 33.4  |     | 92.6  | 70.8  |     | 96.0  | 37.5  | 5.1   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 60.7  | 10.3  |     | 91.1  | 33.4  |     | 92.6  | 70.8  |     | 96.0  | 37.5  | 5.1   |
| LOS                     | E     | B     |     | F     | C     |     | F     | E     |     | F     | D     | A     |
| Approach Delay          |       | 16.0  |     |       | 38.4  |     |       | 78.0  |     |       | 50.8  |       |
| Approach LOS            |       | B     |     |       | D     |     |       | E     |     |       | D     |       |
| Queue Length 50th (ft)  | 89    | 56    |     | 84    | ~167  |     | 160   | 326   |     | 121   | 195   | 20    |
| Queue Length 95th (ft)  | m#106 | m108  |     | m105  | #698  |     | #263  | #462  |     | #208  | 257   | m43   |
| Internal Link Dist (ft) |       | 3407  |     |       | 3546  |     |       | 1238  |     |       | 1239  |       |
| Turn Bay Length (ft)    | 185   |       |     | 220   |       |     | 150   |       |     | 205   |       |       |
| Base Capacity (vph)     | 243   | 2030  |     | 271   | 2060  |     | 406   | 831   |     | 298   | 726   | 431   |
| Starvation Cap Reductn  | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.97  | 0.91  |     | 0.74  | 1.02  |     | 0.98  | 0.98  |     | 0.96  | 0.74  | 0.30  |

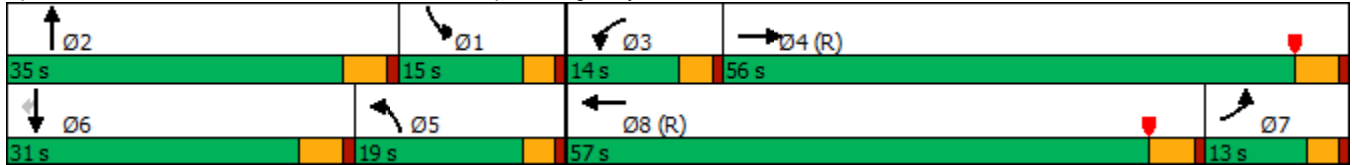
Intersection Summary

|                                    |   |
|------------------------------------|---|
| Area Type:                         | Other   |
| Cycle Length:                      | 120   |
| Actuated Cycle Length:             | 120   |
| Offset:                            | 119 (99%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 115   |
| Control Type:                      | Actuated-Coordinated  |
| Maximum v/c Ratio:                 | 1.02  |
| Intersection Signal Delay:         | 40.5  |
| Intersection LOS:                  | D   |
| Intersection Capacity Utilization: | 98.7%   |
| ICU Level of Service:              | F   |
| Analysis Period (min):             | 15  |

~ Volume exceeds capacity, queue is theoretically infinite.

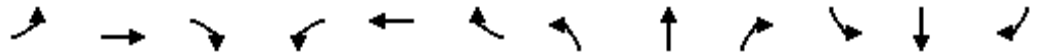
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Kraemer Boulevard & Imperial Highway



Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

PM Year 2035 Plus Project  
 PM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑    | ↔     | ↔↔    | ↑↑    | ↔     |
| Traffic Volume (vph)       | 297   | 1970  | 163   | 180   | 1467  | 160   | 125   | 331   | 138   | 240   | 260   | 168   |
| Future Volume (vph)        | 297   | 1970  | 163   | 180   | 1467  | 160   | 125   | 331   | 138   | 240   | 260   | 168   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Storage Lanes              | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 1.00  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 149   |       |       | 160   |       |       | 136   |       |       | 168   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 3626  |       |       | 3640  |       |       | 1142  |       |       | 3502  |       |
| Travel Time (s)            |       | 82.4  |       |       | 82.7  |       |       | 26.0  |       |       | 79.6  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 297   | 1970  | 163   | 180   | 1467  | 160   | 125   | 331   | 138   | 240   | 260   | 168   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 297   | 1970  | 163   | 180   | 1467  | 160   | 125   | 331   | 138   | 240   | 260   | 168   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       | 24    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

PM Year 2035 Plus Project  
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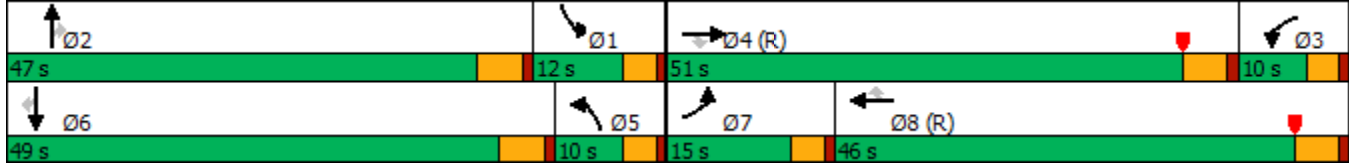
| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     | 4     | 3     | 8     | 8     | 5    | 2     | 2     | 1     | 6     | 6     |
| Switch Phase            |       |       |       |       |       |       |      |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  | 38.0  | 10.0  | 40.0  | 40.0  | 10.0 | 47.0  | 47.0  | 10.0  | 49.0  | 49.0  |
| Total Split (s)         | 15.0  | 51.0  | 51.0  | 10.0  | 46.0  | 46.0  | 10.0 | 47.0  | 47.0  | 12.0  | 49.0  | 49.0  |
| Total Split (%)         | 12.5% | 42.5% | 42.5% | 8.3%  | 38.3% | 38.3% | 8.3% | 39.2% | 39.2% | 10.0% | 40.8% | 40.8% |
| Maximum Green (s)       | 11.0  | 46.0  | 46.0  | 6.0   | 41.0  | 41.0  | 6.0  | 42.0  | 42.0  | 8.0   | 44.0  | 44.0  |
| Yellow Time (s)         | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lag  | Lead  | Lead  | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes  | Yes   | Yes   | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max | C-Max | None  | C-Max | C-Max | None | Max   | Max   | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   | 7.0   |       | 7.0   | 7.0   |      | 7.0   | 7.0   |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  | 26.0  |       | 28.0  | 28.0  |      | 35.0  | 35.0  |       | 37.0  | 37.0  |
| Pedestrian Calls (#/hr) |       | 2     | 2     |       | 2     | 2     |      | 2     | 2     |       | 2     | 2     |
| Act Effct Green (s)     | 11.0  | 46.0  | 46.0  | 6.0   | 41.0  | 41.0  | 6.0  | 42.0  | 42.0  | 8.0   | 44.0  | 44.0  |
| Actuated g/C Ratio      | 0.09  | 0.38  | 0.38  | 0.05  | 0.34  | 0.34  | 0.05 | 0.35  | 0.35  | 0.07  | 0.37  | 0.37  |
| v/c Ratio               | 1.00  | 1.07  | 0.24  | 1.11  | 0.89  | 0.26  | 0.77 | 0.28  | 0.23  | 1.11  | 0.21  | 0.26  |
| Control Delay           | 89.5  | 78.0  | 13.2  | 111.5 | 14.0  | 1.4   | 85.9 | 28.9  | 5.6   | 141.0 | 24.1  | 4.8   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 89.5  | 78.0  | 13.2  | 111.5 | 14.0  | 1.4   | 85.9 | 28.9  | 5.6   | 141.0 | 24.1  | 4.8   |
| LOS                     | F     | E     | B     | F     | B     | A     | F    | C     | A     | F     | C     | A     |
| Approach Delay          |       | 75.1  |       |       | 22.6  |       |      | 35.5  |       |       | 61.2  |       |
| Approach LOS            |       | E     |       |       | C     |       |      | D     |       |       | E     |       |
| Queue Length 50th (ft)  | 125   | ~616  | 45    | ~78   | 102   | 3     | 50   | 96    | 1     | ~108  | 76    | 23    |
| Queue Length 95th (ft)  | m#160 | m#701 | m63   | m#96  | m148  | m3    | #101 | 135   | 45    | m#182 | m104  | m21   |
| Internal Link Dist (ft) |       | 3546  |       |       | 3560  |       |      | 1062  |       |       | 3422  |       |
| Turn Bay Length (ft)    | 190   |       | 315   | 260   |       | 305   | 150  |       | 150   | 240   |       | 185   |
| Base Capacity (vph)     | 298   | 1846  | 666   | 162   | 1646  | 617   | 162  | 1173  | 613   | 216   | 1229  | 656   |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.00  | 1.07  | 0.24  | 1.11  | 0.89  | 0.26  | 0.77 | 0.28  | 0.23  | 1.11  | 0.21  | 0.26  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 26 (22%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.11  
 Intersection Signal Delay: 51.9 Intersection LOS: D  
 Intersection Capacity Utilization 77.5% ICU Level of Service D  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

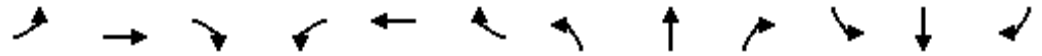
Splits and Phases: 21: Valencia Avenue/ Valencia Avenue & Imperial Highway





Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

PM Year 2035 Plus Project  
PM Year 2035 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 87    | 1916  | 300   | 168   | 1496  | 879   | 271   | 630   | 129   | 1005  | 526   | 32    |
| Future Volume (vph)        | 87    | 1916  | 300   | 168   | 1496  | 879   | 271   | 630   | 129   | 1005  | 526   | 32    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.980 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 27    |       |       |       | 243   |       |       | 136   |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       | 1486  |       |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       | 33.8  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 87    | 1916  | 300   | 168   | 1496  | 879   | 271   | 630   | 129   | 1005  | 526   | 32    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 87    | 2216  | 0     | 168   | 1496  | 879   | 271   | 630   | 129   | 1005  | 526   | 32    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       | 24    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

PM Year 2035 Plus Project  
PM Year 2035 Plus Project



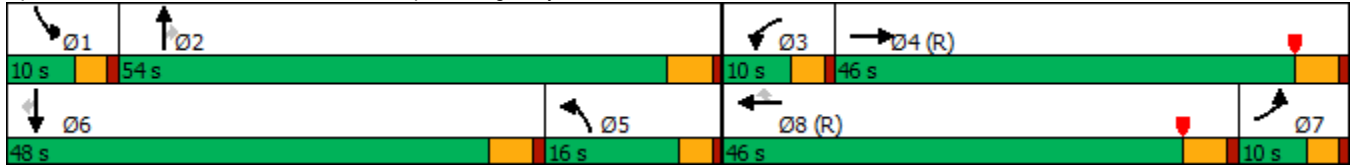
| Lane Group              | EBL  | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL    | SBT    | SBR   |
|-------------------------|------|-------|-----|-------|-------|-------|-------|-------|-------|--------|--------|-------|
| Detector Phase          | 7    | 4     |     | 3     | 8     | 8     | 5     | 2     | 2     | 1      | 6      | 6     |
| Switch Phase            |      |       |     |       |       |       |       |       |       |        |        |       |
| Minimum Initial (s)     | 6.0  | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0    | 6.0    | 6.0   |
| Minimum Split (s)       | 10.0 | 46.0  |     | 10.0  | 38.0  | 38.0  | 10.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (s)         | 10.0 | 46.0  |     | 10.0  | 46.0  | 46.0  | 16.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (%)         | 8.3% | 38.3% |     | 8.3%  | 38.3% | 38.3% | 13.3% | 45.0% | 45.0% | 8.3%   | 40.0%  | 40.0% |
| Maximum Green (s)       | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Yellow Time (s)         | 3.0  | 4.0   |     | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0    | 4.0    | 4.0   |
| All-Red Time (s)        | 1.0  | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    | 1.0    | 1.0   |
| Lost Time Adjust (s)    | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Lost Time (s)     | 4.0  | 5.0   |     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0    | 5.0    | 5.0   |
| Lead/Lag                | Lag  | Lag   |     | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead   | Lead   | Lead  |
| Lead-Lag Optimize?      | Yes  | Yes   |     | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes    | Yes    | Yes   |
| Vehicle Extension (s)   | 3.0  | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0    | 3.0    | 3.0   |
| Recall Mode             | None | C-Max |     | None  | C-Max | C-Max | None  | Max   | Max   | None   | Max    | Max   |
| Walk Time (s)           |      | 7.0   |     |       | 7.0   | 7.0   |       | 7.0   | 7.0   |        | 7.0    | 7.0   |
| Flash Dont Walk (s)     |      | 34.0  |     |       | 26.0  | 26.0  |       | 42.0  | 42.0  |        | 36.0   | 36.0  |
| Pedestrian Calls (#/hr) |      | 2     |     |       | 2     | 2     |       | 2     | 2     |        | 2      | 2     |
| Act Effct Green (s)     | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Actuated g/C Ratio      | 0.05 | 0.34  |     | 0.05  | 0.34  | 0.34  | 0.10  | 0.41  | 0.41  | 0.05   | 0.36   | 0.36  |
| v/c Ratio               | 1.05 | 1.36  |     | 1.04  | 0.91  | 1.31  | 0.83  | 0.46  | 0.19  | 6.20   | 0.44   | 0.05  |
| Control Delay           | 91.0 | 189.9 |     | 136.0 | 47.0  | 174.7 | 75.0  | 27.2  | 4.0   | 2360.7 | 31.2   | 0.1   |
| Queue Delay             | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Delay             | 91.0 | 189.9 |     | 136.0 | 47.0  | 174.7 | 75.0  | 27.2  | 4.0   | 2360.7 | 31.2   | 0.1   |
| LOS                     | F    | F     |     | F     | D     | F     | E     | C     | A     | F      | C      | A     |
| Approach Delay          |      | 186.2 |     |       | 97.0  |       |       | 36.9  |       |        | 1528.4 |       |
| Approach LOS            |      | F     |     |       | F     |       |       | D     |       |        | F      |       |
| Queue Length 50th (ft)  | ~70  | ~801  |     | ~72   | 402   | ~747  | 108   | 184   | 0     | ~775   | 155    | 0     |
| Queue Length 95th (ft)  | m#63 | m#726 |     | #145  | #476  | #996  | #178  | 237   | 34    | #908   | m171   | m0    |
| Internal Link Dist (ft) |      | 3560  |     |       | 1794  |       |       | 838   |       |        | 1406   |       |
| Turn Bay Length (ft)    | 220  |       |     | 230   |       | 270   | 135   |       | 100   | 185    |        | 50    |
| Base Capacity (vph)     | 83   | 1630  |     | 162   | 1646  | 672   | 325   | 1369  | 692   | 162    | 1201   | 630   |
| Starvation Cap Reductn  | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Spillback Cap Reductn   | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Storage Cap Reductn     | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Reduced v/c Ratio       | 1.05 | 1.36  |     | 1.04  | 0.91  | 1.31  | 0.83  | 0.46  | 0.19  | 6.20   | 0.44   | 0.05  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 80 (67%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 6.20  
 Intersection Signal Delay: 417.0 Intersection LOS: F  
 Intersection Capacity Utilization 114.8% ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Rose Drive & Imperial Highway

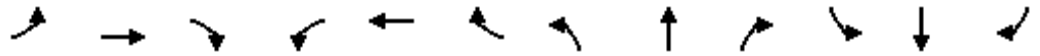


*APPENDIX F-III*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
WITH MITIGATION TRAFFIC CONDITIONS**

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

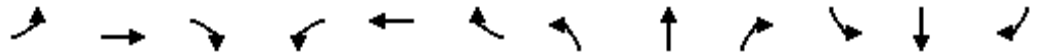
AM Year 2035 Plus Project MIT  
AM Year 2045 Plus Project MIT



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 44    | 1345  | 249   | 280   | 1569  | 598   | 267   | 240   | 152   | 944   | 590   | 37    |
| Future Volume (vph)        | 44    | 1345  | 249   | 280   | 1569  | 598   | 267   | 240   | 152   | 944   | 590   | 37    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.86  | 0.86  | 1.00  |
| Frt                        |       | 0.977 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.988 |       |
| Satd. Flow (prot)          | 1676  | 4707  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 2884  | 2999  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.988 |       |
| Satd. Flow (perm)          | 1676  | 4707  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 2884  | 2999  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 36    |       |       |       | 166   |       |       | 152   |       |       | 152   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       |       | 1486  |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       |       | 33.8  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 44    | 1345  | 249   | 280   | 1569  | 598   | 267   | 240   | 152   | 944   | 590   | 37    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       | 20%   |       |       |
| Lane Group Flow (vph)      | 44    | 1594  | 0     | 280   | 1569  | 598   | 267   | 240   | 152   | 755   | 779   | 37    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | pm+ov | Split | NA    | Perm  | Split | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     | 6     | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

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| Lane Group              | EBL  | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR  | SBL   | SBT   | SBR   |
|-------------------------|------|-------|-----|-------|-------|-------|-------|-------|------|-------|-------|-------|
| Detector Phase          | 7    | 4     |     | 3     | 8     | 6     | 2     | 2     | 2    | 6     | 6     | 6     |
| Switch Phase            |      |       |     |       |       |       |       |       |      |       |       |       |
| Minimum Initial (s)     | 6.0  | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0 | 46.0  |     | 10.0  | 41.0  | 48.0  | 11.0  | 11.0  | 11.0 | 48.0  | 48.0  | 48.0  |
| Total Split (s)         | 10.0 | 46.0  |     | 10.0  | 46.0  | 48.0  | 11.0  | 11.0  | 11.0 | 48.0  | 48.0  | 48.0  |
| Total Split (%)         | 8.7% | 40.0% |     | 8.7%  | 40.0% | 41.7% | 9.6%  | 9.6%  | 9.6% | 41.7% | 41.7% | 41.7% |
| Maximum Green (s)       | 6.0  | 41.0  |     | 6.0   | 41.0  | 43.0  | 6.0   | 6.0   | 6.0  | 43.0  | 43.0  | 43.0  |
| Yellow Time (s)         | 3.0  | 4.0   |     | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0  | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0  | 5.0   |     | 4.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag  | Lag   |     | Lead  | Lead  |       |       |       |      |       |       |       |
| Lead-Lag Optimize?      | Yes  | Yes   |     | Yes   | Yes   |       |       |       |      |       |       |       |
| Vehicle Extension (s)   | 3.0  | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None | C-Max |     | None  | C-Max | Max   | Max   | Max   | Max  | Max   | Max   | Max   |
| Walk Time (s)           |      | 7.0   |     |       | 7.0   | 7.0   |       |       |      | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     |      | 34.0  |     |       | 29.0  | 36.0  |       |       |      | 36.0  | 36.0  | 36.0  |
| Pedestrian Calls (#/hr) |      | 2     |     |       | 2     | 2     |       |       |      | 2     | 2     | 2     |
| Act Effct Green (s)     | 6.0  | 41.0  |     | 6.0   | 43.0  | 91.0  | 6.0   | 6.0   | 6.0  | 43.0  | 43.0  | 43.0  |
| Actuated g/C Ratio      | 0.05 | 0.36  |     | 0.05  | 0.37  | 0.79  | 0.05  | 0.05  | 0.05 | 0.37  | 0.37  | 0.37  |
| v/c Ratio               | 0.51 | 0.94  |     | 1.66  | 0.87  | 0.49  | 1.58  | 1.38  | 0.68 | 0.70  | 0.69  | 0.06  |
| Control Delay           | 73.3 | 46.6  |     | 354.6 | 40.5  | 4.5   | 323.1 | 243.1 | 24.8 | 34.8  | 34.4  | 0.2   |
| Queue Delay             | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Delay             | 73.3 | 46.6  |     | 354.6 | 40.5  | 4.5   | 323.1 | 243.1 | 24.8 | 34.8  | 34.4  | 0.2   |
| LOS                     | E    | D     |     | F     | D     | A     | F     | F     | C    | C     | C     | A     |
| Approach Delay          |      | 47.3  |     |       | 67.6  |       |       | 225.1 |      |       | 33.8  |       |
| Approach LOS            |      | D     |     |       | E     |       |       | F     |      |       | C     |       |
| Queue Length 50th (ft)  | 32   | 406   |     | ~155  | 402   | 89    | ~144  | ~123  | 0    | 272   | 280   | 0     |
| Queue Length 95th (ft)  | #79  | #510  |     | #243  | #481  | 144   | #230  | #208  | #83  | 352   | 360   | 0     |
| Internal Link Dist (ft) |      | 3560  |     |       | 1794  |       |       | 838   |      |       | 1406  |       |
| Turn Bay Length (ft)    | 220  |       |     | 230   |       | 270   | 135   |       | 100  | 185   |       | 50    |
| Base Capacity (vph)     | 87   | 1701  |     | 169   | 1801  | 1221  | 169   | 174   | 222  | 1078  | 1121  | 656   |
| Starvation Cap Reductn  | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     |
| Storage Cap Reductn     | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.51 | 0.94  |     | 1.66  | 0.87  | 0.49  | 1.58  | 1.38  | 0.68 | 0.70  | 0.69  | 0.06  |

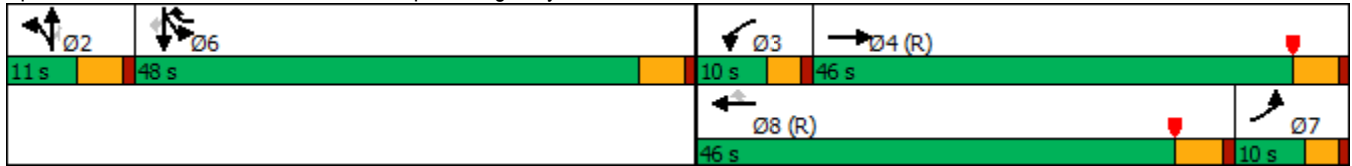
Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 115  
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.66  
 Intersection Signal Delay: 70.4  
 Intersection LOS: E  
 Intersection Capacity Utilization 88.7%  
 ICU Level of Service E  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

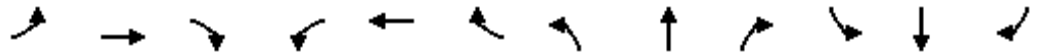
Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 22: Rose Drive & Imperial Highway



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

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| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 87    | 1916  | 300   | 168   | 1496  | 879   | 271   | 630   | 129   | 1005  | 526   | 32    |
| Future Volume (vph)        | 87    | 1916  | 300   | 168   | 1496  | 879   | 271   | 630   | 129   | 1005  | 526   | 32    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.86  | 0.86  | 1.00  |
| Frt                        |       | 0.980 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.984 |       |
| Satd. Flow (prot)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 2884  | 2987  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.984 |       |
| Satd. Flow (perm)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 2884  | 2987  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 29    |       |       |       | 105   |       |       | 152   |       |       | 152   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       |       | 1486  |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       |       | 33.8  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 87    | 1916  | 300   | 168   | 1496  | 879   | 271   | 630   | 129   | 1005  | 526   | 32    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       | 25%   |       |       |
| Lane Group Flow (vph)      | 87    | 2216  | 0     | 168   | 1496  | 879   | 271   | 630   | 129   | 754   | 777   | 32    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | pm+ov | Split | NA    | Perm  | Split | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     | 6     | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

PM Year 2035 Plus Project MIT  
PM Year 2035 Plus Project MIT



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     | 6     | 2     | 2     | 2     | 6     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 46.0  |     | 10.0  | 38.0  | 48.0  | 11.0  | 11.0  | 11.0  | 48.0  | 48.0  | 48.0  |
| Total Split (s)         | 12.0  | 46.0  |     | 10.0  | 44.0  | 47.0  | 12.0  | 12.0  | 12.0  | 47.0  | 47.0  | 47.0  |
| Total Split (%)         | 10.4% | 40.0% |     | 8.7%  | 38.3% | 40.9% | 10.4% | 10.4% | 10.4% | 40.9% | 40.9% | 40.9% |
| Maximum Green (s)       | 8.0   | 41.0  |     | 6.0   | 39.0  | 42.0  | 7.0   | 7.0   | 7.0   | 42.0  | 42.0  | 42.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |       |       |       |       |       |       |       |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |       |       |       |       |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max | Max   | Max   | Max   | Max   | Max   | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   | 7.0   |       |       |       | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 34.0  |     |       | 26.0  | 36.0  |       |       |       | 36.0  | 36.0  | 36.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     | 2     |       |       |       | 2     | 2     | 2     |
| Act Effct Green (s)     | 8.0   | 41.0  |     | 6.0   | 39.0  | 86.0  | 7.0   | 7.0   | 7.0   | 42.0  | 42.0  | 42.0  |
| Actuated g/C Ratio      | 0.07  | 0.36  |     | 0.05  | 0.34  | 0.75  | 0.06  | 0.06  | 0.06  | 0.37  | 0.37  | 0.37  |
| v/c Ratio               | 0.75  | 1.30  |     | 0.99  | 0.92  | 0.77  | 1.38  | 3.09  | 0.55  | 0.72  | 0.71  | 0.05  |
| Control Delay           | 88.8  | 172.8 |     | 122.8 | 46.4  | 12.9  | 238.2 | 971.4 | 14.6  | 36.0  | 35.7  | 0.2   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 88.8  | 172.8 |     | 122.8 | 46.4  | 12.9  | 238.2 | 971.4 | 14.6  | 36.0  | 35.7  | 0.2   |
| LOS                     | F     | F     |     | F     | D     | B     | F     | F     | B     | D     | D     | A     |
| Approach Delay          |       | 169.6 |     |       | 39.9  |       |       | 658.6 |       |       | 35.1  |       |
| Approach LOS            |       | F     |     |       | D     |       |       | F     |       |       | D     |       |
| Queue Length 50th (ft)  | 64    | ~771  |     | 65    | 386   | 289   | ~136  | ~428  | 0     | 276   | 284   | 0     |
| Queue Length 95th (ft)  | #151  | #867  |     | #137  | #480  | 469   | #224  | #546  | 44    | 357   | 365   | 0     |
| Internal Link Dist (ft) |       | 3560  |     |       | 1794  |       |       | 838   |       |       | 1406  |       |
| Turn Bay Length (ft)    | 220   |       |     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Base Capacity (vph)     | 116   | 1701  |     | 169   | 1633  | 1148  | 197   | 204   | 234   | 1053  | 1090  | 644   |
| Starvation Cap Reductn  | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.75  | 1.30  |     | 0.99  | 0.92  | 0.77  | 1.38  | 3.09  | 0.55  | 0.72  | 0.71  | 0.05  |

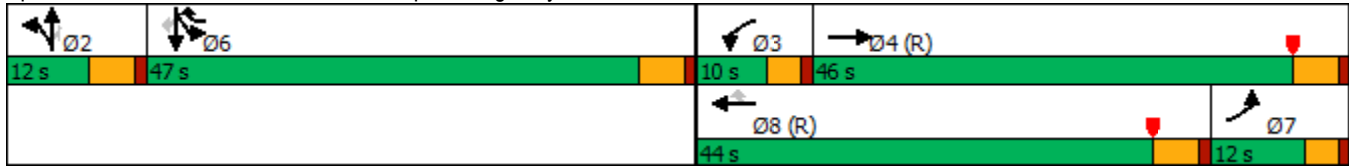
Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 115  |
| Actuated Cycle Length:             | 115  |
| Offset:                            | 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 115  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 3.09   |
| Intersection Signal Delay:         | 164.7  |
| Intersection LOS:                  | F  |
| Intersection Capacity Utilization: | 108.5%   |
| ICU Level of Service:              | G  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 22: Rose Drive & Imperial Highway

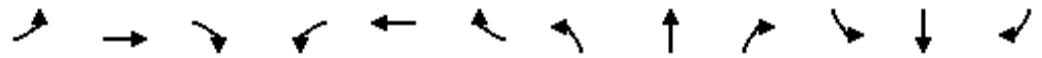


*APPENDIX F-IV*

**YEAR 2045 TRAFFIC CONDITIONS**

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

AM Year 2045  
 AM Year 2045



| Lane Group                 | EBL  | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR   | SBL   | SBT  | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↗↗    | ↘↘    | ↑↑↑   |       |      |      |       | ↗↗    |      | ↗↗    |
| Traffic Volume (vph)       | 0    | 1937  | 650   | 269   | 2247  | 0     | 0    | 0    | 0     | 1060  | 0    | 730   |
| Future Volume (vph)        | 0    | 1937  | 650   | 269   | 2247  | 0     | 0    | 0    | 0     | 1060  | 0    | 730   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  | 1800  | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 0     | 70    |       | 0     | 0    |      | 0     | 0     |      | 0     |
| Storage Lanes              | 0    |       | 2     | 2     |       | 0     | 0    |      | 0     | 2     |      | 2     |
| Taper Length (ft)          | 90   |       |       | 90    |       |       | 90   |      |       | 90    |      |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.88  | 0.97  | 0.91  | 1.00  | 1.00 | 1.00 | 1.00  | 0.97  | 1.00 | 0.88  |
| Frt                        |      |       | 0.850 |       |       |       |      |      |       |       |      | 0.850 |
| Flt Protected              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (prot)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Flt Permitted              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (perm)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Right Turn on Red          |      |       | Yes   |       |       | Yes   |      |      | Yes   |       |      | Yes   |
| Satd. Flow (RTOR)          |      |       | 530   |       |       |       |      |      |       |       |      | 55    |
| Link Speed (mph)           |      | 45    |       |       | 45    |       |      | 30   |       |       | 30   |       |
| Link Distance (ft)         |      | 453   |       |       | 598   |       |      | 824  |       |       | 1360 |       |
| Travel Time (s)            |      | 6.9   |       |       | 9.1   |       |      | 18.7 |       |       | 30.9 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1937  | 650   | 269   | 2247  | 0     | 0    | 0    | 0     | 1060  | 0    | 730   |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |      |      |       |       |      |       |
| Lane Group Flow (vph)      | 0    | 1937  | 650   | 269   | 2247  | 0     | 0    | 0    | 0     | 1060  | 0    | 730   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    | No   | No   | No    | No    | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right | Left  | Left | Right |
| Median Width(ft)           |      | 24    |       |       | 24    |       |      | 24   |       |       | 24   |       |
| Link Offset(ft)            |      | 0     |       |       | 0     |       |      | 0    |       |       | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |       | 16    |       |      | 16   |       |       | 16   |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |      |      |       |       |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     | 15    |      | 9     |
| Number of Detectors        |      | 2     | 1     | 1     | 2     |       |      |      |       | 1     |      | 1     |
| Detector Template          |      | Thru  | Right | Left  | Thru  |       |      |      |       | Left  |      | Right |
| Leading Detector (ft)      |      | 100   | 20    | 20    | 100   |       |      |      |       | 20    |      | 20    |
| Trailing Detector (ft)     |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Size(ft)        |      | 6     | 20    | 20    | 6     |       |      |      |       | 20    |      | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |      |      |       | Cl+Ex |      | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 2 Position(ft)    |      | 94    |       |       | 94    |       |      |      |       |       |      |       |
| Detector 2 Size(ft)        |      | 6     |       |       | 6     |       |      |      |       |       |      |       |
| Detector 2 Type            |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |       |      |       |
| Detector 2 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |       | 0.0   |       |      |      |       |       |      |       |
| Turn Type                  |      | NA    | Perm  | Prot  | NA    |       |      |      |       | Prot  |      | Prot  |
| Protected Phases           |      | 2     |       | 1     | 6     |       |      |      |       | 4     |      | 4     |
| Permitted Phases           |      |       | 2     |       |       |       |      |      |       |       |      |       |

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

AM Year 2045  
 AM Year 2045



| Lane Group              | EBL | EBT   | EBR   | WBL   | WBT   | WBR | NBL | NBT | NBR | SBL   | SBT  | SBR   |
|-------------------------|-----|-------|-------|-------|-------|-----|-----|-----|-----|-------|------|-------|
| Detector Phase          |     | 2     | 2     | 1     | 6     |     |     |     |     | 4     |      | 4     |
| Switch Phase            |     |       |       |       |       |     |     |     |     |       |      |       |
| Minimum Initial (s)     |     | 5.0   | 5.0   | 5.0   | 5.0   |     |     |     |     | 5.0   |      | 5.0   |
| Minimum Split (s)       |     | 20.5  | 20.5  | 9.5   | 31.5  |     |     |     |     | 9.5   |      | 9.5   |
| Total Split (s)         |     | 56.1  | 56.1  | 15.9  | 72.0  |     |     |     |     | 48.0  |      | 48.0  |
| Total Split (%)         |     | 46.8% | 46.8% | 13.3% | 60.0% |     |     |     |     | 40.0% |      | 40.0% |
| Maximum Green (s)       |     | 51.6  | 51.6  | 11.4  | 67.5  |     |     |     |     | 43.5  |      | 43.5  |
| Yellow Time (s)         |     | 3.5   | 3.5   | 3.5   | 3.5   |     |     |     |     | 3.5   |      | 3.5   |
| All-Red Time (s)        |     | 1.0   | 1.0   | 1.0   | 1.0   |     |     |     |     | 1.0   |      | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |     |     |     | 0.0   |      | 0.0   |
| Total Lost Time (s)     |     | 4.5   | 4.5   | 4.5   | 4.5   |     |     |     |     | 4.5   |      | 4.5   |
| Lead/Lag                |     | Lead  | Lead  | Lag   |       |     |     |     |     |       |      |       |
| Lead-Lag Optimize?      |     | Yes   | Yes   | Yes   |       |     |     |     |     |       |      |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   | 3.0   | 3.0   |     |     |     |     | 3.0   |      | 3.0   |
| Recall Mode             |     | C-Max | C-Max | None  | C-Max |     |     |     |     | None  |      | None  |
| Walk Time (s)           |     | 7.0   | 7.0   |       | 7.0   |     |     |     |     |       |      |       |
| Flash Dont Walk (s)     |     | 9.0   | 9.0   |       | 20.0  |     |     |     |     |       |      |       |
| Pedestrian Calls (#/hr) |     | 2     | 2     |       | 2     |     |     |     |     |       |      |       |
| Act Effct Green (s)     |     | 52.5  | 52.5  | 11.4  | 68.4  |     |     |     |     | 42.6  |      | 42.6  |
| Actuated g/C Ratio      |     | 0.44  | 0.44  | 0.10  | 0.57  |     |     |     |     | 0.36  |      | 0.36  |
| v/c Ratio               |     | 0.92  | 0.45  | 0.87  | 0.82  |     |     |     |     | 0.92  |      | 0.75  |
| Control Delay           |     | 39.3  | 11.6  | 70.4  | 20.3  |     |     |     |     | 50.2  |      | 36.8  |
| Queue Delay             |     | 20.5  | 0.2   | 0.0   | 2.5   |     |     |     |     | 0.0   |      | 0.0   |
| Total Delay             |     | 59.8  | 11.7  | 70.4  | 22.8  |     |     |     |     | 50.2  |      | 36.8  |
| LOS                     |     | E     | B     | E     | C     |     |     |     |     | D     |      | D     |
| Approach Delay          |     | 47.7  |       |       | 27.9  |     |     |     |     |       | 44.7 |       |
| Approach LOS            |     | D     |       |       | C     |     |     |     |     |       | D    |       |
| Queue Length 50th (ft)  |     | 404   | 77    | 104   | 331   |     |     |     |     | 396   |      | 257   |
| Queue Length 95th (ft)  |     | m401  | m73   | m#144 | m387  |     |     |     |     | #522  |      | 339   |
| Internal Link Dist (ft) |     | 373   |       |       | 518   |     |     | 744 |     |       | 1280 |       |
| Turn Bay Length (ft)    |     |       |       | 70    |       |     |     |     |     |       |      |       |
| Base Capacity (vph)     |     | 2106  | 1452  | 308   | 2744  |     |     |     |     | 1178  |      | 992   |
| Starvation Cap Reductn  |     | 200   | 193   | 0     | 106   |     |     |     |     | 0     |      | 0     |
| Spillback Cap Reductn   |     | 241   | 0     | 0     | 366   |     |     |     |     | 0     |      | 3     |
| Storage Cap Reductn     |     | 0     | 0     | 0     | 0     |     |     |     |     | 0     |      | 0     |
| Reduced v/c Ratio       |     | 1.04  | 0.52  | 0.87  | 0.94  |     |     |     |     | 0.90  |      | 0.74  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.92  
 Intersection Signal Delay: 39.7  
 Intersection LOS: D  
 Intersection Capacity Utilization 90.4%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

|          |        |      |
|----------|--------|------|
| → Ø2 (R) | ↙ Ø1   | ↘ Ø4 |
| 56.1 s   | 15.9 s | 48 s |
| ← Ø6 (R) |        |      |
| 72 s     |        |      |

Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

AM Year 2045  
 AM Year 2045



| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT  | NBR   | SBL  | SBT  | SBR   |
|----------------------------|------|-------|-------|------|-------|-------|-------|------|-------|------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑     |      | ↑↑↑   | ↑     | ↑↑    |      | ↑     |      |      |       |
| Traffic Volume (vph)       | 0    | 2563  | 424   | 0    | 1412  | 511   | 1104  | 0    | 527   | 0    | 0    | 0     |
| Future Volume (vph)        | 0    | 2563  | 424   | 0    | 1412  | 511   | 1104  | 0    | 527   | 0    | 0    | 0     |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800 | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 100   | 0    |       | 0     | 215   |      | 0     | 0    |      | 0     |
| Storage Lanes              | 0    |       | 1     | 0    |       | 1     | 1     |      | 1     | 0    |      | 0     |
| Taper Length (ft)          | 90   |       |       | 90   |       |       | 90    |      |       | 90   |      |       |
| Lane Util. Factor          | 1.00 | 0.86  | 0.86  | 1.00 | 0.91  | 1.00  | 0.97  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Frt                        |      | 0.998 | 0.850 |      |       | 0.850 |       |      | 0.850 |      |      |       |
| Flt Protected              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (prot)          | 0    | 4544  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Flt Permitted              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (perm)          | 0    | 4544  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Right Turn on Red          |      |       | Yes   |      |       | Yes   |       |      | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |      | 3     | 141   |      |       | 326   |       |      | 14    |      |      |       |
| Link Speed (mph)           |      | 45    |       |      | 45    |       |       | 30   |       |      | 30   |       |
| Link Distance (ft)         |      | 598   |       |      | 654   |       |       | 831  |       |      | 1116 |       |
| Travel Time (s)            |      | 9.1   |       |      | 9.9   |       |       | 18.9 |       |      | 25.4 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 2563  | 424   | 0    | 1412  | 511   | 1104  | 0    | 527   | 0    | 0    | 0     |
| Shared Lane Traffic (%)    |      |       | 10%   |      |       |       |       |      |       |      |      |       |
| Lane Group Flow (vph)      | 0    | 2605  | 382   | 0    | 1412  | 511   | 1104  | 0    | 527   | 0    | 0    | 0     |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No   | No    | No   | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left | Right | Left | Left | Right |
| Median Width(ft)           |      | 24    |       |      | 24    |       |       | 24   |       |      | 24   |       |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0    |       |      | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16   |       |      | 16   |       |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |      |       |      |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |      | 9     | 15   |      | 9     |
| Number of Detectors        |      | 2     | 1     |      | 2     | 1     | 1     |      | 1     |      |      |       |
| Detector Template          |      | Thru  | Right |      | Thru  | Right | Left  |      | Right |      |      |       |
| Leading Detector (ft)      |      | 100   | 20    |      | 100   | 20    | 20    |      | 20    |      |      |       |
| Trailing Detector (ft)     |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Position(ft)    |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Size(ft)        |      | 6     | 20    |      | 6     | 20    | 20    |      | 20    |      |      |       |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |      | Cl+Ex | Cl+Ex | Cl+Ex |      | Cl+Ex |      |      |       |
| Detector 1 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 2 Position(ft)    |      | 94    |       |      | 94    |       |       |      |       |      |      |       |
| Detector 2 Size(ft)        |      | 6     |       |      | 6     |       |       |      |       |      |      |       |
| Detector 2 Type            |      | Cl+Ex |       |      | Cl+Ex |       |       |      |       |      |      |       |
| Detector 2 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |      | 0.0   |       |       |      |       |      |      |       |
| Turn Type                  |      | NA    | Perm  |      | NA    | Free  | Prot  |      | Perm  |      |      |       |
| Protected Phases           |      | 2     |       |      | 6     |       | 3     |      |       |      |      |       |
| Permitted Phases           |      |       | 2     |      |       | Free  |       |      | 3     |      |      |       |

Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

AM Year 2045  
 AM Year 2045



| Lane Group              | EBL | EBT   | EBR   | WBL | WBT   | WBR   | NBL   | NBT  | NBR   | SBL | SBT  | SBR |
|-------------------------|-----|-------|-------|-----|-------|-------|-------|------|-------|-----|------|-----|
| Detector Phase          |     | 2     | 2     |     | 6     |       | 3     |      | 3     |     |      |     |
| Switch Phase            |     |       |       |     |       |       |       |      |       |     |      |     |
| Minimum Initial (s)     |     | 5.0   | 5.0   |     | 5.0   |       | 5.0   |      | 5.0   |     |      |     |
| Minimum Split (s)       |     | 36.5  | 36.5  |     | 20.5  |       | 23.5  |      | 23.5  |     |      |     |
| Total Split (s)         |     | 74.0  | 74.0  |     | 74.0  |       | 46.0  |      | 46.0  |     |      |     |
| Total Split (%)         |     | 61.7% | 61.7% |     | 61.7% |       | 38.3% |      | 38.3% |     |      |     |
| Maximum Green (s)       |     | 69.5  | 69.5  |     | 69.5  |       | 41.5  |      | 41.5  |     |      |     |
| Yellow Time (s)         |     | 3.5   | 3.5   |     | 3.5   |       | 3.5   |      | 3.5   |     |      |     |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   |       | 1.0   |      | 1.0   |     |      |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   |       | 0.0   |      | 0.0   |     |      |     |
| Total Lost Time (s)     |     | 4.5   | 4.5   |     | 4.5   |       | 4.5   |      | 4.5   |     |      |     |
| Lead/Lag                |     |       |       |     |       |       |       |      |       |     |      |     |
| Lead-Lag Optimize?      |     |       |       |     |       |       |       |      |       |     |      |     |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   |       | 3.0   |      | 3.0   |     |      |     |
| Recall Mode             |     | C-Max | C-Max |     | C-Max |       | None  |      | None  |     |      |     |
| Walk Time (s)           |     | 7.0   | 7.0   |     |       |       |       |      |       |     |      |     |
| Flash Dont Walk (s)     |     | 25.0  | 25.0  |     |       |       |       |      |       |     |      |     |
| Pedestrian Calls (#/hr) |     | 2     | 2     |     |       |       |       |      |       |     |      |     |
| Act Effct Green (s)     |     | 69.5  | 69.5  |     | 69.5  | 120.0 | 41.5  |      | 41.5  |     |      |     |
| Actuated g/C Ratio      |     | 0.58  | 0.58  |     | 0.58  | 1.00  | 0.35  |      | 0.35  |     |      |     |
| v/c Ratio               |     | 0.99  | 0.47  |     | 0.51  | 0.34  | 0.98  |      | 1.00  |     |      |     |
| Control Delay           |     | 20.8  | 4.4   |     | 1.0   | 0.4   | 62.1  |      | 78.0  |     |      |     |
| Queue Delay             |     | 31.1  | 0.0   |     | 0.0   | 0.0   | 0.0   |      | 0.0   |     |      |     |
| Total Delay             |     | 51.9  | 4.4   |     | 1.0   | 0.4   | 62.1  |      | 78.0  |     |      |     |
| LOS                     |     | D     | A     |     | A     | A     | E     |      | E     |     |      |     |
| Approach Delay          |     | 45.8  |       |     | 0.8   |       |       | 67.2 |       |     |      |     |
| Approach LOS            |     | D     |       |     | A     |       |       | E    |       |     |      |     |
| Queue Length 50th (ft)  |     | 363   | 68    |     | 13    | 0     | 434   |      | 397   |     |      |     |
| Queue Length 95th (ft)  |     | #887  | m66   |     | m16   | m0    | #581  |      | #636  |     |      |     |
| Internal Link Dist (ft) |     | 518   |       |     | 574   |       |       | 751  |       |     | 1036 |     |
| Turn Bay Length (ft)    |     |       | 100   |     |       |       | 215   |      |       |     |      |     |
| Base Capacity (vph)     |     | 2632  | 806   |     | 2790  | 1500  | 1124  |      | 527   |     |      |     |
| Starvation Cap Reductn  |     | 71    | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Spillback Cap Reductn   |     | 219   | 0     |     | 62    | 0     | 0     |      | 0     |     |      |     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Reduced v/c Ratio       |     | 1.08  | 0.47  |     | 0.52  | 0.34  | 0.98  |      | 1.00  |     |      |     |

Intersection Summary

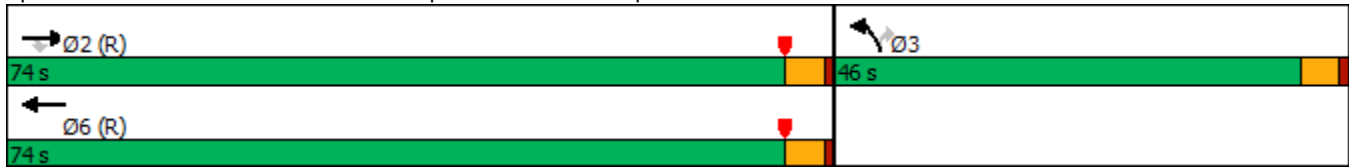
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 9 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.00  
 Intersection Signal Delay: 38.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 97.5%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.



Queue shown is maximum after two cycles.

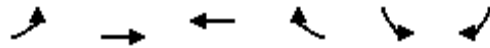
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road



Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

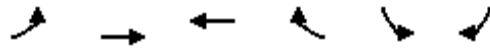
AM Year 2045  
 AM Year 2045



| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SBL   | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑↑   |       | ↓↓↓   | ↓     |
| Traffic Volume (vph)       | 0    | 1739  | 2223  | 0     | 682   | 572   |
| Future Volume (vph)        | 0    | 1739  | 2223  | 0     | 682   | 572   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 0    |       |       | 0     | 0     | 260   |
| Storage Lanes              | 0    |       |       | 0     | 2     | 1     |
| Taper Length (ft)          | 90   |       |       |       | 90    |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.91  | 1.00  | 0.97  | 0.91  |
| Frt                        |      |       |       |       | 0.969 | 0.850 |
| Flt Protected              |      |       |       |       | 0.962 |       |
| Satd. Flow (prot)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Flt Permitted              |      |       |       |       | 0.962 |       |
| Satd. Flow (perm)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Right Turn on Red          |      |       |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |      |       |       |       | 2     | 2     |
| Link Speed (mph)           |      | 45    | 45    |       | 30    |       |
| Link Distance (ft)         |      | 293   | 273   |       | 775   |       |
| Travel Time (s)            |      | 4.4   | 4.1   |       | 17.6  |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 0    | 1739  | 2223  | 0     | 682   | 572   |
| Shared Lane Traffic (%)    |      |       |       |       |       | 31%   |
| Lane Group Flow (vph)      | 0    | 1739  | 2223  | 0     | 859   | 395   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |
| Median Width(ft)           |      | 0     | 0     |       | 24    |       |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    | 16    |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |
| Number of Detectors        |      | 2     | 2     |       | 1     | 1     |
| Detector Template          |      | Thru  | Thru  |       | Left  | Right |
| Leading Detector (ft)      |      | 100   | 100   |       | 20    | 20    |
| Trailing Detector (ft)     |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        |      | 6     | 6     |       | 20    | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |      | 94    | 94    |       |       |       |
| Detector 2 Size(ft)        |      | 6     | 6     |       |       |       |
| Detector 2 Type            |      | Cl+Ex | Cl+Ex |       |       |       |
| Detector 2 Channel         |      |       |       |       |       |       |
| Detector 2 Extend (s)      |      | 0.0   | 0.0   |       |       |       |
| Turn Type                  |      | NA    | NA    |       | Prot  | Prot  |
| Protected Phases           |      | 4     | 8     |       | 6     | 6     |
| Permitted Phases           |      |       |       |       |       |       |

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

AM Year 2045  
 AM Year 2045



| Lane Group              | EBL | EBT   | WBT   | WBR | SBL   | SBR   |
|-------------------------|-----|-------|-------|-----|-------|-------|
| Detector Phase          |     | 4     | 8     |     | 6     | 6     |
| Switch Phase            |     |       |       |     |       |       |
| Minimum Initial (s)     |     | 6.0   | 6.0   |     | 6.0   | 6.0   |
| Minimum Split (s)       |     | 11.0  | 25.0  |     | 11.0  | 11.0  |
| Total Split (s)         |     | 30.0  | 30.0  |     | 20.0  | 20.0  |
| Total Split (%)         |     | 60.0% | 60.0% |     | 40.0% | 40.0% |
| Maximum Green (s)       |     | 25.0  | 25.0  |     | 15.0  | 15.0  |
| Yellow Time (s)         |     | 4.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     |     | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Lead/Lag                |     |       |       |     |       |       |
| Lead-Lag Optimize?      |     |       |       |     |       |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             |     | C-Max | C-Max |     | Max   | Max   |
| Walk Time (s)           |     |       | 7.0   |     |       |       |
| Flash Dont Walk (s)     |     |       | 13.0  |     |       |       |
| Pedestrian Calls (#/hr) |     |       | 2     |     |       |       |
| Act Effct Green (s)     |     | 25.0  | 25.0  |     | 15.0  | 15.0  |
| Actuated g/C Ratio      |     | 0.50  | 0.50  |     | 0.30  | 0.30  |
| v/c Ratio               |     | 0.72  | 0.92  |     | 0.90  | 0.96  |
| Control Delay           |     | 12.0  | 12.0  |     | 31.9  | 58.8  |
| Queue Delay             |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             |     | 12.0  | 12.0  |     | 31.9  | 58.8  |
| LOS                     |     | B     | B     |     | C     | E     |
| Approach Delay          |     | 12.0  | 12.0  |     | 40.4  |       |
| Approach LOS            |     | B     | B     |     | D     |       |
| Queue Length 50th (ft)  |     | 131   | 195   |     | 121   | 121   |
| Queue Length 95th (ft)  |     | 178   | m301  |     | #220  | #285  |
| Internal Link Dist (ft) |     | 213   | 193   |     | 695   |       |
| Turn Bay Length (ft)    |     |       |       |     |       | 260   |
| Base Capacity (vph)     |     | 2409  | 2409  |     | 958   | 410   |
| Starvation Cap Reductn  |     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   |     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       |     | 0.72  | 0.92  |     | 0.90  | 0.96  |

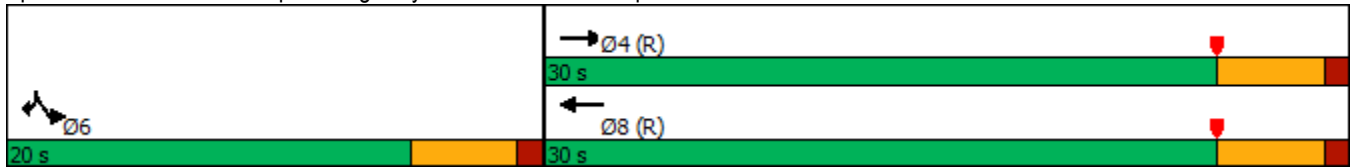
Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 43 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 18.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 124.5%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

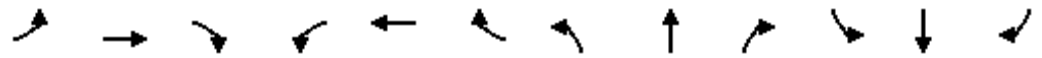
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Imperial Highway & SR-57 SB Off-Ramp



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

AM Year 2045  
 AM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT   | NBR   | SBL  | SBT  | SBR   |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|-------|
| Lane Configurations        | ↘     | ↑↑↑   |       |      | ↑↑↑   |       | ↘↘    | ↔     | ↗     |      |      | ↗↗    |
| Traffic Volume (vph)       | 118   | 1549  | 0     | 0    | 1730  | 18    | 1153  | 43    | 945   | 0    | 0    | 51    |
| Future Volume (vph)        | 118   | 1549  | 0     | 0    | 1730  | 18    | 1153  | 43    | 945   | 0    | 0    | 51    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 260   |       | 0     | 0    |       | 0     | 610   |       | 350   | 0    |      | 0     |
| Storage Lanes              | 1     |       | 0     | 0    |       | 0     | 1     |       | 1     | 0    |      | 2     |
| Taper Length (ft)          | 90    |       |       | 90   |       |       | 90    |       |       | 90   |      |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00 | 0.86  | 0.86  | 0.91  | 0.86  | 0.95  | 1.00 | 1.00 | 0.88  |
| Frt                        |       |       |       |      | 0.998 |       |       | 0.892 | 0.850 |      |      | 0.850 |
| Flt Protected              | 0.950 |       |       |      |       |       | 0.950 | 0.990 |       |      |      |       |
| Satd. Flow (prot)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1340  | 1425  | 0    | 0    | 2640  |
| Flt Permitted              | 0.950 |       |       |      |       |       | 0.950 | 0.990 |       |      |      |       |
| Satd. Flow (perm)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1340  | 1425  | 0    | 0    | 2640  |
| Right Turn on Red          |       |       | Yes   |      |       | Yes   |       |       | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |       |       |       |      | 2     |       |       | 140   | 148   |      |      | 214   |
| Link Speed (mph)           |       | 45    |       |      | 45    |       |       | 30    |       |      |      | 30    |
| Link Distance (ft)         |       | 271   |       |      | 540   |       |       | 932   |       |      |      | 494   |
| Travel Time (s)            |       | 4.1   |       |      | 8.2   |       |       | 21.2  |       |      |      | 11.2  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 118   | 1549  | 0     | 0    | 1730  | 18    | 1153  | 43    | 945   | 0    | 0    | 51    |
| Shared Lane Traffic (%)    |       |       |       |      |       |       | 10%   |       | 43%   |      |      |       |
| Lane Group Flow (vph)      | 118   | 1549  | 0     | 0    | 1748  | 0     | 1038  | 564   | 539   | 0    | 0    | 51    |
| Enter Blocked Intersection | No    | No    | No    | No   | No    | No    | No    | No    | No    | No   | No   | No    |
| Lane Alignment             | Left  | Left  | Right | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right |
| Median Width(ft)           |       | 12    |       |      | 12    |       |       | 24    |       |      |      | 24    |
| Link Offset(ft)            |       | 0     |       |      | 0     |       |       | 0     |       |      |      | 0     |
| Crosswalk Width(ft)        |       | 16    |       |      | 16    |       |       | 16    |       |      |      | 16    |
| Two way Left Turn Lane     |       |       |       |      |       |       |       |       |       |      |      |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     |
| Number of Detectors        | 1     | 2     |       |      | 2     |       | 1     | 2     | 1     |      |      | 1     |
| Detector Template          | Left  | Thru  |       |      | Thru  |       | Left  | Thru  | Right |      |      | Right |
| Leading Detector (ft)      | 20    | 100   |       |      | 100   |       | 20    | 100   | 20    |      |      | 20    |
| Trailing Detector (ft)     | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       |      | 6     |       | 20    | 6     | 20    |      |      | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       |      | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |      |      | Cl+Ex |
| Detector 1 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |      | 94    |       |       | 94    |       |      |      |       |
| Detector 2 Size(ft)        |       | 6     |       |      | 6     |       |       | 6     |       |      |      |       |
| Detector 2 Type            |       | Cl+Ex |       |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |
| Detector 2 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 2 Extend (s)      |       | 0.0   |       |      | 0.0   |       |       | 0.0   |       |      |      |       |
| Turn Type                  | Prot  | NA    |       |      | NA    |       | Split | NA    | Prot  |      |      | Prot  |
| Protected Phases           | 7     | 4     |       |      | 8     |       | 2     | 2     | 2     |      |      | 1     |
| Permitted Phases           |       |       |       |      |       |       |       |       |       |      |      |       |

Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

AM Year 2045  
 AM Year 2045



| Lane Group              | EBL   | EBT   | EBR | WBL | WBT   | WBR | NBL   | NBT   | NBR   | SBL | SBT | SBR   |
|-------------------------|-------|-------|-----|-----|-------|-----|-------|-------|-------|-----|-----|-------|
| Detector Phase          | 7     | 4     |     |     | 8     |     | 2     | 2     | 2     |     |     | 1     |
| Switch Phase            |       |       |     |     |       |     |       |       |       |     |     |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     |     | 6.0   |     | 6.0   | 6.0   | 6.0   |     |     | 6.0   |
| Minimum Split (s)       | 10.0  | 32.0  |     |     | 28.0  |     | 11.0  | 11.0  | 11.0  |     |     | 11.0  |
| Total Split (s)         | 12.0  | 50.0  |     |     | 38.0  |     | 39.0  | 39.0  | 39.0  |     |     | 11.0  |
| Total Split (%)         | 12.0% | 50.0% |     |     | 38.0% |     | 39.0% | 39.0% | 39.0% |     |     | 11.0% |
| Maximum Green (s)       | 8.0   | 45.0  |     |     | 33.0  |     | 34.0  | 34.0  | 34.0  |     |     | 6.0   |
| Yellow Time (s)         | 3.0   | 4.0   |     |     | 4.0   |     | 4.0   | 4.0   | 4.0   |     |     | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     |     | 1.0   |     | 1.0   | 1.0   | 1.0   |     |     | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     |     | 5.0   |     | 5.0   | 5.0   | 5.0   |     |     | 5.0   |
| Lead/Lag                | Lead  |       |     |     | Lag   |     | Lead  | Lead  | Lead  |     |     | Lag   |
| Lead-Lag Optimize?      | Yes   |       |     |     | Yes   |     | Yes   | Yes   | Yes   |     |     | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     |     | 3.0   |     | 3.0   | 3.0   | 3.0   |     |     | 3.0   |
| Recall Mode             | None  | C-Max |     |     | C-Max |     | Max   | Max   | Max   |     |     | None  |
| Walk Time (s)           |       | 7.0   |     |     | 7.0   |     |       |       |       |     |     |       |
| Flash Dont Walk (s)     |       | 20.0  |     |     | 16.0  |     |       |       |       |     |     |       |
| Pedestrian Calls (#/hr) |       | 2     |     |     | 2     |     |       |       |       |     |     |       |
| Act Effct Green (s)     | 8.3   | 47.2  |     |     | 34.9  |     | 34.0  | 34.0  | 34.0  |     |     | 6.0   |
| Actuated g/C Ratio      | 0.08  | 0.47  |     |     | 0.35  |     | 0.34  | 0.34  | 0.34  |     |     | 0.06  |
| v/c Ratio               | 0.85  | 0.68  |     |     | 0.83  |     | 1.00  | 1.03  | 0.93  |     |     | 0.14  |
| Control Delay           | 82.2  | 23.1  |     |     | 34.4  |     | 62.1  | 72.3  | 47.3  |     |     | 0.8   |
| Queue Delay             | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0   |
| Total Delay             | 82.2  | 23.1  |     |     | 34.4  |     | 62.1  | 72.3  | 47.3  |     |     | 0.8   |
| LOS                     | F     | C     |     |     | C     |     | E     | E     | D     |     |     | A     |
| Approach Delay          |       | 27.3  |     |     | 34.4  |     |       | 61.1  |       |     |     | 0.8   |
| Approach LOS            |       | C     |     |     | C     |     |       | E     |       |     |     | A     |
| Queue Length 50th (ft)  | 77    | 326   |     |     | 302   |     | ~360  | ~375  | 265   |     |     | 0     |
| Queue Length 95th (ft)  | m#116 | m384  |     |     | 352   |     | #514  | #619  | #493  |     |     | 0     |
| Internal Link Dist (ft) |       | 191   |     |     | 460   |     |       | 852   |       |     |     | 414   |
| Turn Bay Length (ft)    | 260   |       |     |     |       |     | 610   |       | 350   |     |     |       |
| Base Capacity (vph)     | 139   | 2274  |     |     | 2115  |     | 1037  | 548   | 582   |     |     | 359   |
| Starvation Cap Reductn  | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Storage Cap Reductn     | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Reduced v/c Ratio       | 0.85  | 0.68  |     |     | 0.83  |     | 1.00  | 1.03  | 0.93  |     |     | 0.14  |

Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 80 (80%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 42.2  
 Intersection LOS: D  
 Intersection Capacity Utilization 81.1%  
 ICU Level of Service D  
 Analysis Period (min) 15

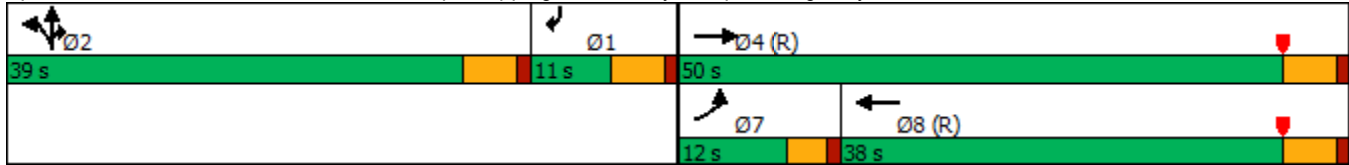
~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

AM Year 2045  
 AM Year 2045

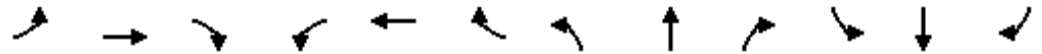
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway



Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

AM Year 2045  
AM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↖     | ↖↖↖   |       | ↖     | ↖↖↖   |       | ↖↖    | ↖↖    |       | ↖↖    | ↖     | ↖     |
| Traffic Volume (vph)       | 238   | 2185  | 117   | 103   | 1795  | 112   | 172   | 236   | 93    | 190   | 370   | 186   |
| Future Volume (vph)        | 238   | 2185  | 117   | 103   | 1795  | 112   | 172   | 236   | 93    | 190   | 370   | 186   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 340   |       | 0     | 200   |       | 0     | 170   |       | 0     | 210   |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 1.00  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 1.00  | 1.00  |
| Frt                        |       | 0.992 |       |       | 0.991 |       |       | 0.958 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4779  | 0     | 1676  | 4774  | 0     | 3252  | 3212  | 0     | 3252  | 1765  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4779  | 0     | 1676  | 4774  | 0     | 3252  | 3212  | 0     | 3252  | 1765  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 9     |       |       | 9     |       |       | 49    |       |       |       | 186   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 540   |       |       | 1433  |       |       | 1004  |       |       |       | 3109  |
| Travel Time (s)            |       | 12.3  |       |       | 32.6  |       |       | 22.8  |       |       |       | 70.7  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 238   | 2185  | 117   | 103   | 1795  | 112   | 172   | 236   | 93    | 190   | 370   | 186   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 238   | 2302  | 0     | 103   | 1907  | 0     | 172   | 329   | 0     | 190   | 370   | 186   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 12    |       |       | 12    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |



Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

AM Year 2045  
AM Year 2045



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL  | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1    | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |      |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 37.0  |     | 10.0  | 40.0  |     | 10.0 | 41.0  | 41.0  |
| Total Split (s)         | 20.0  | 58.0  |     | 11.0  | 49.0  |     | 10.0  | 40.0  |     | 11.0 | 41.0  | 41.0  |
| Total Split (%)         | 16.7% | 48.3% |     | 9.2%  | 40.8% |     | 8.3%  | 33.3% |     | 9.2% | 34.2% | 34.2% |
| Maximum Green (s)       | 16.0  | 53.0  |     | 7.0   | 44.0  |     | 6.0   | 35.0  |     | 7.0  | 36.0  | 36.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag  | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes  | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |      | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 25.0  |     |       | 28.0  |     |      | 29.0  | 29.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |      | 2     | 2     |
| Act Effct Green (s)     | 16.0  | 53.0  |     | 7.0   | 44.0  |     | 6.0   | 35.0  |     | 7.0  | 36.0  | 36.0  |
| Actuated g/C Ratio      | 0.13  | 0.44  |     | 0.06  | 0.37  |     | 0.05  | 0.29  |     | 0.06 | 0.30  | 0.30  |
| v/c Ratio               | 1.07  | 1.09  |     | 1.06  | 1.09  |     | 1.06  | 0.34  |     | 1.01 | 0.70  | 0.32  |
| Control Delay           | 128.7 | 81.1  |     | 151.9 | 73.0  |     | 142.0 | 29.3  |     | 71.5 | 22.9  | 9.5   |
| Queue Delay             | 0.0   | 5.3   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   |
| Total Delay             | 128.7 | 86.3  |     | 151.9 | 73.0  |     | 142.0 | 29.3  |     | 71.5 | 22.9  | 9.5   |
| LOS                     | F     | F     |     | F     | E     |     | F     | C     |     | E    | C     | A     |
| Approach Delay          |       | 90.3  |     |       | 77.0  |     |       | 68.0  |     |      | 31.9  |       |
| Approach LOS            |       | F     |     |       | E     |     |       | E     |     |      | C     |       |
| Queue Length 50th (ft)  | ~204  | ~734  |     | ~86   | ~613  |     | ~75   | 88    |     | ~81  | 243   | 60    |
| Queue Length 95th (ft)  | #366  | #830  |     | m#195 | #706  |     | #149  | 130   |     | m73  | m208  | m45   |
| Internal Link Dist (ft) |       | 460   |     |       | 1353  |     |       | 924   |     |      | 3029  |       |
| Turn Bay Length (ft)    | 340   |       |     | 200   |       |     | 170   |       |     | 210  |       |       |
| Base Capacity (vph)     | 223   | 2115  |     | 97    | 1756  |     | 162   | 971   |     | 189  | 529   | 580   |
| Starvation Cap Reductn  | 0     | 242   |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Reduced v/c Ratio       | 1.07  | 1.23  |     | 1.06  | 1.09  |     | 1.06  | 0.34  |     | 1.01 | 0.70  | 0.32  |

Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 3 (3%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.09   |
| Intersection Signal Delay:         | 76.3   |
| Intersection LOS:                  | E  |
| Intersection Capacity Utilization: | 94.1%  |
| ICU Level of Service:              | F  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

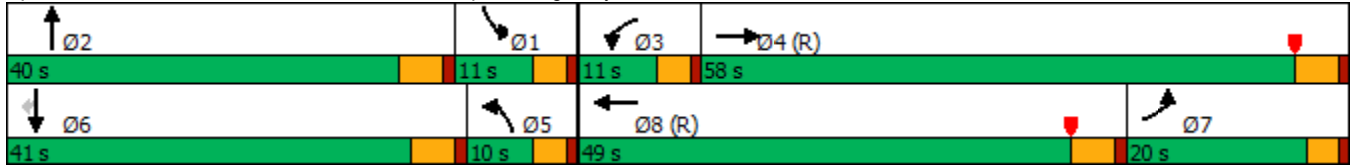
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Associated Road & Imperial Highway



Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

AM Year 2045  
 AM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↙     | ↑↑↑   | ↗     | ↙     | ↑↑↑   |       | ↙     | ↑     | ↗     | ↙     | ↗     |       |
| Traffic Volume (vph)       | 14    | 2159  | 488   | 201   | 1729  | 37    | 203   | 14    | 167   | 28    | 33    | 16    |
| Future Volume (vph)        | 14    | 2159  | 488   | 201   | 1729  | 37    | 203   | 14    | 167   | 28    | 33    | 16    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 140   |       | 200   | 225   |       | 0     | 195   |       | 0     | 85    |       | 0     |
| Storage Lanes              | 1     |       | 1     | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00  | 0.91  | 0.91  | 0.95  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       |       | 0.850 |       | 0.997 |       |       |       | 0.850 |       | 0.951 |       |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.958 |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4818  | 1500  | 1676  | 4803  | 0     | 1593  | 1606  | 1500  | 1676  | 1678  | 0     |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.958 |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4818  | 1500  | 1676  | 4803  | 0     | 1593  | 1606  | 1500  | 1676  | 1678  | 0     |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 317   |       | 4     |       |       |       | 167   |       | 15    |       |
| Link Speed (mph)           |       | 30    |       | 30    |       |       | 30    |       | 30    |       | 30    |       |
| Link Distance (ft)         |       | 1433  |       | 3487  |       |       | 2609  |       | 962   |       |       |       |
| Travel Time (s)            |       | 32.6  |       | 79.3  |       |       | 59.3  |       | 21.9  |       |       |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 14    | 2159  | 488   | 201   | 1729  | 37    | 203   | 14    | 167   | 28    | 33    | 16    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       | 47%   |       |       |       |       |       |
| Lane Group Flow (vph)      | 14    | 2159  | 488   | 201   | 1766  | 0     | 108   | 109   | 167   | 28    | 49    | 0     |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       | 24    |       |       | 12    |       | 12    |       | 12    |       |
| Link Offset(ft)            |       | 0     |       | 0     |       |       | 0     |       | 0     |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       | 16    |       |       | 16    |       | 16    |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 2 Position(ft)    |       | 94    |       | 94    |       |       | 94    |       | 94    |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       | 6     |       |       | 6     |       | 6     |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       | Cl+Ex |       |       | Cl+Ex |       | Cl+Ex |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       | 0.0   |       |       | 0.0   |       | 0.0   |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    |       | Split | NA    | Perm  | Split | NA    |       |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       |       |       |       | 2     |       |       |       |

Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

AM Year 2045  
 AM Year 2045



| Lane Group              | EBL  | EBT   | EBR   | WBL   | WBT   | WBR | NBL   | NBT   | NBR   | SBL  | SBT  | SBR |
|-------------------------|------|-------|-------|-------|-------|-----|-------|-------|-------|------|------|-----|
| Detector Phase          | 7    | 4     | 4     | 3     | 8     |     | 2     | 2     | 2     | 6    | 6    |     |
| Switch Phase            |      |       |       |       |       |     |       |       |       |      |      |     |
| Minimum Initial (s)     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0  | 6.0  |     |
| Minimum Split (s)       | 10.0 | 33.0  | 33.0  | 10.0  | 26.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (s)         | 10.0 | 62.0  | 62.0  | 20.0  | 72.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (%)         | 8.3% | 51.7% | 51.7% | 16.7% | 60.0% |     | 22.5% | 22.5% | 22.5% | 9.2% | 9.2% |     |
| Maximum Green (s)       | 6.0  | 57.0  | 57.0  | 16.0  | 67.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Yellow Time (s)         | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   |     | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |     |
| All-Red Time (s)        | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0  | 1.0  |     |
| Lost Time Adjust (s)    | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Lost Time (s)     | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   |     | 5.0   | 5.0   | 5.0   | 5.0  | 5.0  |     |
| Lead/Lag                | Lead | Lead  | Lead  | Lag   | Lag   |     |       |       |       |      |      |     |
| Lead-Lag Optimize?      | Yes  | Yes   | Yes   | Yes   | Yes   |     |       |       |       |      |      |     |
| Vehicle Extension (s)   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |     |
| Recall Mode             | None | C-Max | C-Max | None  | C-Max |     | Max   | Max   | Max   | Max  | Max  |     |
| Walk Time (s)           |      | 7.0   | 7.0   |       | 7.0   |     | 7.0   | 7.0   | 7.0   |      |      |     |
| Flash Dont Walk (s)     |      | 21.0  | 21.0  |       | 14.0  |     | 15.0  | 15.0  | 15.0  |      |      |     |
| Pedestrian Calls (#/hr) |      | 2     | 2     |       | 2     |     | 2     | 2     | 2     |      |      |     |
| Act Effct Green (s)     | 6.0  | 57.0  | 57.0  | 16.0  | 73.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Actuated g/C Ratio      | 0.05 | 0.48  | 0.48  | 0.13  | 0.61  |     | 0.18  | 0.18  | 0.18  | 0.05 | 0.05 |     |
| v/c Ratio               | 0.17 | 0.94  | 0.56  | 0.90  | 0.60  |     | 0.37  | 0.37  | 0.41  | 0.34 | 0.50 |     |
| Control Delay           | 81.9 | 10.0  | 1.0   | 67.3  | 3.7   |     | 47.2  | 47.2  | 9.5   | 66.4 | 59.5 |     |
| Queue Delay             | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Delay             | 81.9 | 10.0  | 1.0   | 67.3  | 3.7   |     | 47.2  | 47.2  | 9.5   | 66.4 | 59.5 |     |
| LOS                     | F    | B     | A     | E     | A     |     | D     | D     | A     | E    | E    |     |
| Approach Delay          |      | 8.8   |       |       | 10.2  |     |       | 30.8  |       |      | 62.0 |     |
| Approach LOS            |      | A     |       |       | B     |     |       | C     |       |      | E    |     |
| Queue Length 50th (ft)  | 11   | 95    | 3     | 147   | 56    |     | 77    | 78    | 0     | 21   | 26   |     |
| Queue Length 95th (ft)  | m13  | m90   | m3    | m#283 | 79    |     | 137   | 138   | 60    | 53   | #72  |     |
| Internal Link Dist (ft) |      | 1353  |       |       | 3407  |     |       | 2529  |       |      | 882  |     |
| Turn Bay Length (ft)    | 140  |       | 200   | 225   |       |     | 195   |       |       | 85   |      |     |
| Base Capacity (vph)     | 83   | 2288  | 878   | 223   | 2923  |     | 292   | 294   | 411   | 83   | 98   |     |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Spillback Cap Reductn   | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Storage Cap Reductn     | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Reduced v/c Ratio       | 0.17 | 0.94  | 0.56  | 0.90  | 0.60  |     | 0.37  | 0.37  | 0.41  | 0.34 | 0.50 |     |

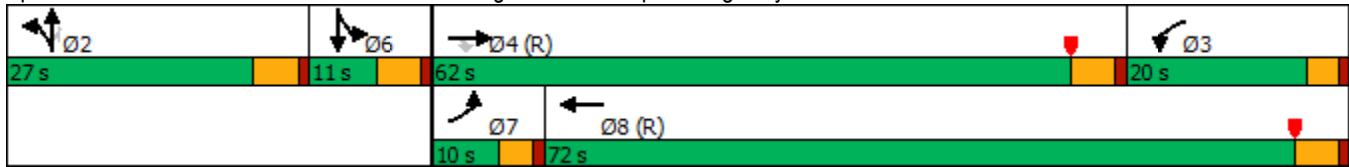
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 56 (47%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 105  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 11.8 Intersection LOS: B  
 Intersection Capacity Utilization 80.4% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Placentia Avenue/Castlegate Lane & Imperial Highway



Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

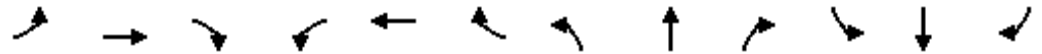
AM Year 2045  
AM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 155   | 1500  | 276   | 81    | 1241  | 101   | 202   | 269   | 99    | 413   | 724   | 148   |
| Future Volume (vph)        | 155   | 1500  | 276   | 81    | 1241  | 101   | 202   | 269   | 99    | 413   | 724   | 148   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 185   |       | 0     | 220   |       | 0     | 150   |       | 0     | 205   |       | 0     |
| Storage Lanes              | 2     |       | 0     | 2     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 0.91  | 0.97  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.977 |       |       | 0.989 |       |       | 0.960 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4707  | 0     | 3252  | 4765  | 0     | 3252  | 3219  | 0     | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4707  | 0     | 3252  | 4765  | 0     | 3252  | 3219  | 0     | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 39    |       |       | 13    |       |       | 40    |       |       |       | 148   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3487  |       |       | 3626  |       |       | 1318  |       |       |       | 1319  |
| Travel Time (s)            |       | 79.3  |       |       | 82.4  |       |       | 30.0  |       |       |       | 30.0  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 155   | 1500  | 276   | 81    | 1241  | 101   | 202   | 269   | 99    | 413   | 724   | 148   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 155   | 1776  | 0     | 81    | 1342  | 0     | 202   | 368   | 0     | 413   | 724   | 148   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
 20: Kraemer Boulevard & Imperial Highway

AM Year 2045  
 AM Year 2045



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |      |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0 | 40.0  |     | 10.0  | 31.0  |     | 10.0  | 31.0  | 31.0  |
| Total Split (s)         | 14.0  | 57.0  |     | 10.0 | 53.0  |     | 14.0  | 31.0  |     | 22.0  | 39.0  | 39.0  |
| Total Split (%)         | 11.7% | 47.5% |     | 8.3% | 44.2% |     | 11.7% | 25.8% |     | 18.3% | 32.5% | 32.5% |
| Maximum Green (s)       | 10.0  | 52.0  |     | 6.0  | 48.0  |     | 10.0  | 26.0  |     | 18.0  | 34.0  | 34.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead | Lead  |     | Lag   | Lag   |     | Lead  | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |      | 28.0  |     |       | 19.0  |     |       | 19.0  | 19.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 10.0  | 54.0  |     | 6.0  | 48.0  |     | 10.0  | 26.4  |     | 17.6  | 34.0  | 34.0  |
| Actuated g/C Ratio      | 0.08  | 0.45  |     | 0.05 | 0.40  |     | 0.08  | 0.22  |     | 0.15  | 0.28  | 0.28  |
| v/c Ratio               | 0.57  | 0.83  |     | 0.50 | 0.70  |     | 0.75  | 0.50  |     | 0.87  | 0.76  | 0.28  |
| Control Delay           | 29.9  | 5.1   |     | 86.5 | 9.3   |     | 71.1  | 39.1  |     | 61.4  | 25.7  | 1.3   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 29.9  | 5.1   |     | 86.5 | 9.3   |     | 71.1  | 39.1  |     | 61.4  | 25.7  | 1.3   |
| LOS                     | C     | A     |     | F    | A     |     | E     | D     |     | E     | C     | A     |
| Approach Delay          |       | 7.1   |     |      | 13.7  |     |       | 50.5  |     |       | 34.3  |       |
| Approach LOS            |       | A     |     |      | B     |     |       | D     |     |       | C     |       |
| Queue Length 50th (ft)  | 56    | 42    |     | 31   | 61    |     | 80    | 117   |     | 127   | 160   | 1     |
| Queue Length 95th (ft)  | m61   | m90   |     | m34  | m57   |     | #134  | 168   |     | #234  | 241   | m7    |
| Internal Link Dist (ft) |       | 3407  |     |      | 3546  |     |       | 1238  |     |       | 1239  |       |
| Turn Bay Length (ft)    | 185   |       |     | 220  |       |     | 150   |       |     | 205   |       |       |
| Base Capacity (vph)     | 271   | 2139  |     | 162  | 1913  |     | 271   | 740   |     | 487   | 950   | 531   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.57  | 0.83  |     | 0.50 | 0.70  |     | 0.75  | 0.50  |     | 0.85  | 0.76  | 0.28  |

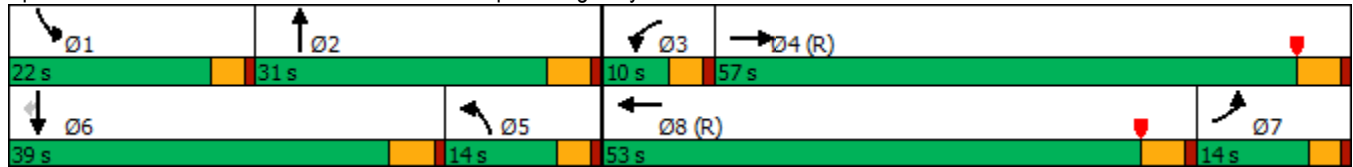
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 1 (1%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 20.4      Intersection LOS: C  
 Intersection Capacity Utilization 84.3%      ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Kraemer Boulevard & Imperial Highway





Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

AM Year 2045  
 AM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 199   | 1142  | 99    | 133   | 1771  | 164   | 151   | 203   | 135   | 306   | 305   | 200   |
| Future Volume (vph)        | 199   | 1142  | 99    | 133   | 1771  | 164   | 151   | 203   | 135   | 306   | 305   | 200   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Storage Lanes              | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 1.00  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 145   |       |       | 152   |       |       | 145   |       |       | 178   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 3626  |       |       | 3640  |       |       | 1142  |       |       | 3502  |       |
| Travel Time (s)            |       | 82.4  |       |       | 82.7  |       |       | 26.0  |       |       | 79.6  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 199   | 1142  | 99    | 133   | 1771  | 164   | 151   | 203   | 135   | 306   | 305   | 200   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 199   | 1142  | 99    | 133   | 1771  | 164   | 151   | 203   | 135   | 306   | 305   | 200   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       | 24    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

AM Year 2045  
 AM Year 2045



| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     | 4     | 3     | 8     | 8     | 5     | 2     | 2     | 1     | 6     | 6     |
| Switch Phase            |       |       |       |       |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  | 38.0  | 10.0  | 40.0  | 40.0  | 10.0  | 47.0  | 47.0  | 10.0  | 49.0  | 49.0  |
| Total Split (s)         | 12.0  | 45.0  | 45.0  | 13.0  | 46.0  | 46.0  | 13.0  | 47.0  | 47.0  | 15.0  | 49.0  | 49.0  |
| Total Split (%)         | 10.0% | 37.5% | 37.5% | 10.8% | 38.3% | 38.3% | 10.8% | 39.2% | 39.2% | 12.5% | 40.8% | 40.8% |
| Maximum Green (s)       | 8.0   | 40.0  | 40.0  | 9.0   | 41.0  | 41.0  | 9.0   | 42.0  | 42.0  | 11.0  | 44.0  | 44.0  |
| Yellow Time (s)         | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max | C-Max | None  | C-Max | C-Max | None  | Max   | Max   | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   | 7.0   |       | 7.0   | 7.0   |       | 7.0   | 7.0   |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  | 26.0  |       | 28.0  | 28.0  |       | 35.0  | 35.0  |       | 37.0  | 37.0  |
| Pedestrian Calls (#/hr) |       | 2     | 2     |       | 2     | 2     |       | 2     | 2     |       | 2     | 2     |
| Act Effct Green (s)     | 8.0   | 40.0  | 40.0  | 9.0   | 41.0  | 41.0  | 8.8   | 42.0  | 42.0  | 11.0  | 44.2  | 44.2  |
| Actuated g/C Ratio      | 0.07  | 0.33  | 0.33  | 0.08  | 0.34  | 0.34  | 0.07  | 0.35  | 0.35  | 0.09  | 0.37  | 0.37  |
| v/c Ratio               | 0.92  | 0.71  | 0.17  | 0.55  | 1.08  | 0.27  | 0.64  | 0.17  | 0.22  | 1.03  | 0.25  | 0.30  |
| Control Delay           | 74.6  | 37.0  | 7.6   | 37.9  | 61.7  | 2.9   | 66.8  | 27.5  | 4.5   | 78.5  | 9.8   | 0.8   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 74.6  | 37.0  | 7.6   | 37.9  | 61.7  | 2.9   | 66.8  | 27.5  | 4.5   | 78.5  | 9.8   | 0.8   |
| LOS                     | E     | D     | A     | D     | E     | A     | E     | C     | A     | E     | A     | A     |
| Approach Delay          |       | 40.2  |       |       | 55.5  |       |       | 33.3  |       |       | 33.5  |       |
| Approach LOS            |       | D     |       |       | E     |       |       | C     |       |       | C     |       |
| Queue Length 50th (ft)  | 77    | 333   | 9     | 44    | ~536  | 9     | 59    | 56    | 0     | ~131  | 23    | 0     |
| Queue Length 95th (ft)  | m#109 | 381   | m20   | m49   | m#599 | m12   | 95    | 86    | 37    | m#165 | m28   | m0    |
| Internal Link Dist (ft) |       | 3546  |       |       | 3560  |       |       | 1062  |       |       | 3422  |       |
| Turn Bay Length (ft)    | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Base Capacity (vph)     | 216   | 1606  | 596   | 243   | 1646  | 612   | 243   | 1173  | 619   | 298   | 1236  | 665   |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.92  | 0.71  | 0.17  | 0.55  | 1.08  | 0.27  | 0.62  | 0.17  | 0.22  | 1.03  | 0.25  | 0.30  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 21 (18%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 44.9  
 Intersection Capacity Utilization 72.2%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service C

~ Volume exceeds capacity, queue is theoretically infinite.

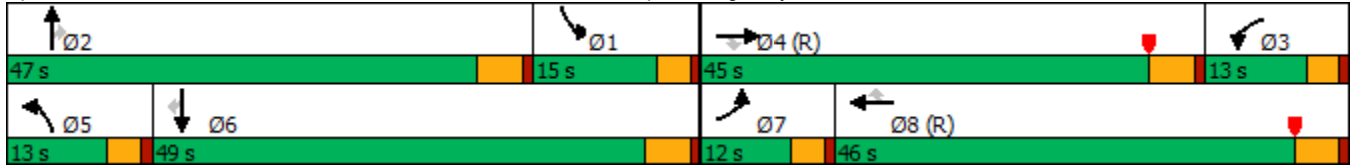
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Valencia Avenue/ Valencia Avenue & Imperial Highway



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

AM Year 2045  
AM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 40    | 1391  | 277   | 294   | 1639  | 607   | 280   | 216   | 160   | 940   | 531   | 24    |
| Future Volume (vph)        | 40    | 1391  | 277   | 294   | 1639  | 607   | 280   | 216   | 160   | 940   | 531   | 24    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.975 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4697  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4697  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 38    |       |       |       | 544   |       |       | 139   |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       |       | 1486  |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       |       | 33.8  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 40    | 1391  | 277   | 294   | 1639  | 607   | 280   | 216   | 160   | 940   | 531   | 24    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 40    | 1668  | 0     | 294   | 1639  | 607   | 280   | 216   | 160   | 940   | 531   | 24    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

AM Year 2045  
AM Year 2045



| Lane Group              | EBL  | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL    | SBT    | SBR   |
|-------------------------|------|-------|-----|-------|-------|-------|-------|-------|-------|--------|--------|-------|
| Detector Phase          | 7    | 4     |     | 3     | 8     | 8     | 5     | 2     | 2     | 1      | 6      | 6     |
| Switch Phase            |      |       |     |       |       |       |       |       |       |        |        |       |
| Minimum Initial (s)     | 6.0  | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0    | 6.0    | 6.0   |
| Minimum Split (s)       | 10.0 | 46.0  |     | 10.0  | 38.0  | 38.0  | 10.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (s)         | 10.0 | 46.0  |     | 10.0  | 46.0  | 46.0  | 16.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (%)         | 8.3% | 38.3% |     | 8.3%  | 38.3% | 38.3% | 13.3% | 45.0% | 45.0% | 8.3%   | 40.0%  | 40.0% |
| Maximum Green (s)       | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Yellow Time (s)         | 3.0  | 4.0   |     | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0    | 4.0    | 4.0   |
| All-Red Time (s)        | 1.0  | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    | 1.0    | 1.0   |
| Lost Time Adjust (s)    | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Lost Time (s)     | 4.0  | 5.0   |     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0    | 5.0    | 5.0   |
| Lead/Lag                | Lag  | Lag   |     | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead   | Lead   | Lead  |
| Lead-Lag Optimize?      | Yes  | Yes   |     | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes    | Yes    | Yes   |
| Vehicle Extension (s)   | 3.0  | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0    | 3.0    | 3.0   |
| Recall Mode             | None | C-Max |     | None  | C-Max | C-Max | None  | Max   | Max   | None   | Max    | Max   |
| Walk Time (s)           |      | 7.0   |     |       | 7.0   | 7.0   |       | 7.0   | 7.0   |        | 7.0    | 7.0   |
| Flash Dont Walk (s)     |      | 34.0  |     |       | 26.0  | 26.0  |       | 42.0  | 42.0  |        | 36.0   | 36.0  |
| Pedestrian Calls (#/hr) |      | 2     |     |       | 2     | 2     |       | 2     | 2     |        | 2      | 2     |
| Act Effct Green (s)     | 6.0  | 41.0  |     | 6.0   | 43.0  | 43.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Actuated g/C Ratio      | 0.05 | 0.34  |     | 0.05  | 0.36  | 0.36  | 0.10  | 0.41  | 0.41  | 0.05   | 0.36   | 0.36  |
| v/c Ratio               | 0.48 | 1.02  |     | 1.81  | 0.95  | 0.69  | 0.86  | 0.16  | 0.23  | 5.80   | 0.44   | 0.04  |
| Control Delay           | 42.4 | 37.4  |     | 422.1 | 50.8  | 8.9   | 78.2  | 22.9  | 6.0   | 2175.0 | 37.6   | 0.0   |
| Queue Delay             | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Delay             | 42.4 | 37.4  |     | 422.1 | 50.8  | 8.9   | 78.2  | 22.9  | 6.0   | 2175.0 | 37.6   | 0.0   |
| LOS                     | D    | D     |     | F     | D     | A     | E     | C     | A     | F      | D      | A     |
| Approach Delay          |      | 37.5  |     |       | 83.8  |       |       | 42.4  |       |        | 1380.9 |       |
| Approach LOS            |      | D     |     |       | F     |       |       | D     |       |        | F      |       |
| Queue Length 50th (ft)  | 26   | ~119  |     | ~176  | 461   | 33    | 111   | 54    | 10    | ~736   | 164    | 0     |
| Queue Length 95th (ft)  | m40  | m#546 |     | #267  | #579  | 159   | #187  | 82    | 53    | m#553  | m126   | m0    |
| Internal Link Dist (ft) |      | 3560  |     |       | 1794  |       |       | 838   |       |        | 1406   |       |
| Turn Bay Length (ft)    | 220  |       |     | 230   |       | 270   | 135   |       | 100   | 185    |        | 50    |
| Base Capacity (vph)     | 83   | 1629  |     | 162   | 1726  | 886   | 325   | 1369  | 694   | 162    | 1201   | 630   |
| Starvation Cap Reductn  | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Spillback Cap Reductn   | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Storage Cap Reductn     | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Reduced v/c Ratio       | 0.48 | 1.02  |     | 1.81  | 0.95  | 0.69  | 0.86  | 0.16  | 0.23  | 5.80   | 0.44   | 0.04  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 82 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 5.80  
 Intersection Signal Delay: 370.2 Intersection LOS: F  
 Intersection Capacity Utilization 93.3% ICU Level of Service F  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

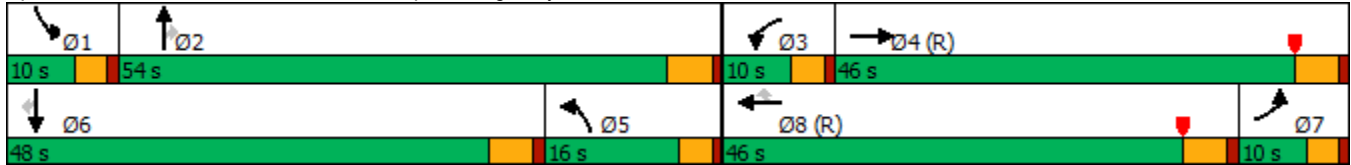
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Rose Drive & Imperial Highway



Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

PM Year 2045  
 PM Year 2045



| Lane Group                 | EBL  | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR   | SBL   | SBT  | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↗↗    | ↘↘    | ↑↑↑   |       |      |      |       | ↗↗    |      | ↗↗    |
| Traffic Volume (vph)       | 0    | 1466  | 877   | 256   | 1807  | 0     | 0    | 0    | 0     | 477   | 0    | 897   |
| Future Volume (vph)        | 0    | 1466  | 877   | 256   | 1807  | 0     | 0    | 0    | 0     | 477   | 0    | 897   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  | 1800  | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 0     | 70    |       | 0     | 0    |      | 0     | 0     |      | 0     |
| Storage Lanes              | 0    |       | 2     | 2     |       | 0     | 0    |      | 0     | 2     |      | 2     |
| Taper Length (ft)          | 90   |       |       | 90    |       |       | 90   |      |       | 90    |      |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.88  | 0.97  | 0.91  | 1.00  | 1.00 | 1.00 | 1.00  | 0.97  | 1.00 | 0.88  |
| Frt                        |      |       | 0.850 |       |       |       |      |      |       |       |      | 0.850 |
| Flt Protected              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (prot)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Flt Permitted              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (perm)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Right Turn on Red          |      |       | Yes   |       |       | Yes   |      |      | Yes   |       |      | Yes   |
| Satd. Flow (RTOR)          |      |       | 877   |       |       |       |      |      |       |       |      | 55    |
| Link Speed (mph)           |      | 45    |       |       | 45    |       |      | 30   |       |       | 30   |       |
| Link Distance (ft)         |      | 453   |       |       | 598   |       |      | 824  |       |       | 1360 |       |
| Travel Time (s)            |      | 6.9   |       |       | 9.1   |       |      | 18.7 |       |       | 30.9 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1466  | 877   | 256   | 1807  | 0     | 0    | 0    | 0     | 477   | 0    | 897   |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |      |      |       |       |      |       |
| Lane Group Flow (vph)      | 0    | 1466  | 877   | 256   | 1807  | 0     | 0    | 0    | 0     | 477   | 0    | 897   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    | No   | No   | No    | No    | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right | Left  | Left | Right |
| Median Width(ft)           |      | 24    |       |       | 24    |       |      | 24   |       |       | 24   |       |
| Link Offset(ft)            |      | 0     |       |       | 0     |       |      | 0    |       |       | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |       | 16    |       |      | 16   |       |       | 16   |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |      |      |       |       |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     | 15    |      | 9     |
| Number of Detectors        |      | 2     | 1     | 1     | 2     |       |      |      |       | 1     |      | 1     |
| Detector Template          |      | Thru  | Right | Left  | Thru  |       |      |      |       | Left  |      | Right |
| Leading Detector (ft)      |      | 100   | 20    | 20    | 100   |       |      |      |       | 20    |      | 20    |
| Trailing Detector (ft)     |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Size(ft)        |      | 6     | 20    | 20    | 6     |       |      |      |       | 20    |      | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |      |      |       | Cl+Ex |      | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 2 Position(ft)    |      | 94    |       |       | 94    |       |      |      |       |       |      |       |
| Detector 2 Size(ft)        |      | 6     |       |       | 6     |       |      |      |       |       |      |       |
| Detector 2 Type            |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |       |      |       |
| Detector 2 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |       | 0.0   |       |      |      |       |       |      |       |
| Turn Type                  |      | NA    | Perm  | Prot  | NA    |       |      |      |       | Prot  |      | Prot  |
| Protected Phases           |      | 2     |       | 1     | 6     |       |      |      |       | 4     |      | 4     |
| Permitted Phases           |      | 2     |       |       |       |       |      |      |       |       |      |       |

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

PM Year 2045  
 PM Year 2045



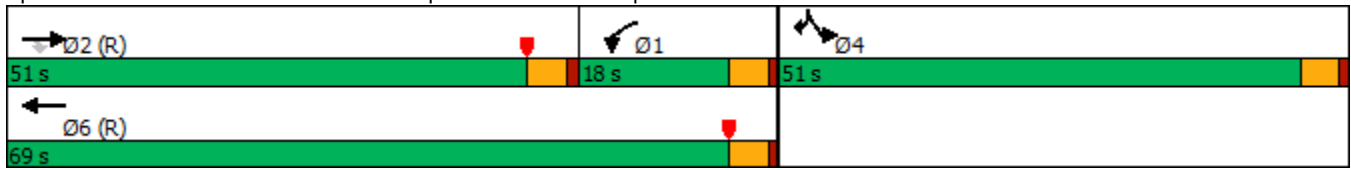
| Lane Group              | EBL | EBT   | EBR   | WBL   | WBT   | WBR | NBL | NBT | NBR | SBL   | SBT  | SBR   |
|-------------------------|-----|-------|-------|-------|-------|-----|-----|-----|-----|-------|------|-------|
| Detector Phase          |     | 2     | 2     | 1     | 6     |     |     |     |     | 4     |      | 4     |
| Switch Phase            |     |       |       |       |       |     |     |     |     |       |      |       |
| Minimum Initial (s)     |     | 5.0   | 5.0   | 5.0   | 5.0   |     |     |     |     | 5.0   |      | 5.0   |
| Minimum Split (s)       |     | 20.5  | 20.5  | 9.5   | 31.5  |     |     |     |     | 9.5   |      | 9.5   |
| Total Split (s)         |     | 51.0  | 51.0  | 18.0  | 69.0  |     |     |     |     | 51.0  |      | 51.0  |
| Total Split (%)         |     | 42.5% | 42.5% | 15.0% | 57.5% |     |     |     |     | 42.5% |      | 42.5% |
| Maximum Green (s)       |     | 46.5  | 46.5  | 13.5  | 64.5  |     |     |     |     | 46.5  |      | 46.5  |
| Yellow Time (s)         |     | 3.5   | 3.5   | 3.5   | 3.5   |     |     |     |     | 3.5   |      | 3.5   |
| All-Red Time (s)        |     | 1.0   | 1.0   | 1.0   | 1.0   |     |     |     |     | 1.0   |      | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |     |     |     | 0.0   |      | 0.0   |
| Total Lost Time (s)     |     | 4.5   | 4.5   | 4.5   | 4.5   |     |     |     |     | 4.5   |      | 4.5   |
| Lead/Lag                |     | Lead  | Lead  | Lag   |       |     |     |     |     |       |      |       |
| Lead-Lag Optimize?      |     | Yes   | Yes   | Yes   |       |     |     |     |     |       |      |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   | 3.0   | 3.0   |     |     |     |     | 3.0   |      | 3.0   |
| Recall Mode             |     | C-Max | C-Max | None  | C-Max |     |     |     |     | None  |      | None  |
| Walk Time (s)           |     | 7.0   | 7.0   |       | 7.0   |     |     |     |     |       |      |       |
| Flash Dont Walk (s)     |     | 9.0   | 9.0   |       | 20.0  |     |     |     |     |       |      |       |
| Pedestrian Calls (#/hr) |     | 2     | 2     |       | 2     |     |     |     |     |       |      |       |
| Act Effct Green (s)     |     | 49.1  | 49.1  | 13.5  | 67.1  |     |     |     |     | 43.9  |      | 43.9  |
| Actuated g/C Ratio      |     | 0.41  | 0.41  | 0.11  | 0.56  |     |     |     |     | 0.37  |      | 0.37  |
| v/c Ratio               |     | 0.74  | 0.55  | 0.70  | 0.67  |     |     |     |     | 0.40  |      | 0.90  |
| Control Delay           |     | 21.1  | 2.0   | 60.3  | 19.9  |     |     |     |     | 29.0  |      | 45.9  |
| Queue Delay             |     | 0.9   | 0.5   | 0.0   | 0.2   |     |     |     |     | 0.0   |      | 0.0   |
| Total Delay             |     | 22.0  | 2.5   | 60.3  | 20.1  |     |     |     |     | 29.0  |      | 45.9  |
| LOS                     |     | C     | A     | E     | C     |     |     |     |     | C     |      | D     |
| Approach Delay          |     | 14.7  |       |       | 25.1  |     |     |     |     |       | 40.0 |       |
| Approach LOS            |     | B     |       |       | C     |     |     |     |     |       | D    |       |
| Queue Length 50th (ft)  |     | 163   | 25    | 99    | 297   |     |     |     |     | 135   |      | 339   |
| Queue Length 95th (ft)  |     | m175  | m25   | 145   | 375   |     |     |     |     | 180   |      | 438   |
| Internal Link Dist (ft) |     | 373   |       |       | 518   |     |     | 744 |     |       | 1280 |       |
| Turn Bay Length (ft)    |     |       |       | 70    |       |     |     |     |     |       |      |       |
| Base Capacity (vph)     |     | 1969  | 1598  | 365   | 2692  |     |     |     |     | 1260  |      | 1056  |
| Starvation Cap Reductn  |     | 245   | 325   | 0     | 233   |     |     |     |     | 0     |      | 0     |
| Spillback Cap Reductn   |     | 0     | 0     | 0     | 38    |     |     |     |     | 0     |      | 0     |
| Storage Cap Reductn     |     | 0     | 0     | 0     | 0     |     |     |     |     | 0     |      | 0     |
| Reduced v/c Ratio       |     | 0.85  | 0.69  | 0.70  | 0.73  |     |     |     |     | 0.38  |      | 0.85  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 112 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 24.4 Intersection LOS: C  
 Intersection Capacity Utilization 77.5% ICU Level of Service D  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

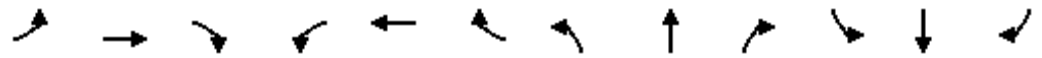


Splits and Phases: 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road



Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

PM Year 2045  
 PM Year 2045



| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT  | NBR   | SBL  | SBT  | SBR   |
|----------------------------|------|-------|-------|------|-------|-------|-------|------|-------|------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑     |      | ↑↑↑   | ↑     | ↑↑    |      | ↑     |      |      |       |
| Traffic Volume (vph)       | 0    | 1604  | 605   | 0    | 1166  | 526   | 710   | 0    | 302   | 0    | 0    | 0     |
| Future Volume (vph)        | 0    | 1604  | 605   | 0    | 1166  | 526   | 710   | 0    | 302   | 0    | 0    | 0     |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800 | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 100   | 0    |       | 0     | 215   |      | 0     | 0    |      | 0     |
| Storage Lanes              | 0    |       | 1     | 0    |       | 1     | 1     |      | 1     | 0    |      | 0     |
| Taper Length (ft)          | 90   |       |       | 90   |       |       | 90    |      |       | 90   |      |       |
| Lane Util. Factor          | 1.00 | 0.86  | 0.86  | 1.00 | 0.91  | 1.00  | 0.97  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Frt                        |      | 0.990 | 0.850 |      |       | 0.850 |       |      | 0.850 |      |      |       |
| Flt Protected              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (prot)          | 0    | 4507  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Flt Permitted              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (perm)          | 0    | 4507  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Right Turn on Red          |      |       | Yes   |      |       | Yes   |       |      | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |      | 14    | 299   |      |       | 407   |       |      | 21    |      |      |       |
| Link Speed (mph)           |      | 45    |       |      | 45    |       |       | 30   |       |      | 30   |       |
| Link Distance (ft)         |      | 598   |       |      | 654   |       |       | 831  |       |      | 1116 |       |
| Travel Time (s)            |      | 9.1   |       |      | 9.9   |       |       | 18.9 |       |      | 25.4 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1604  | 605   | 0    | 1166  | 526   | 710   | 0    | 302   | 0    | 0    | 0     |
| Shared Lane Traffic (%)    |      |       | 19%   |      |       |       |       |      |       |      |      |       |
| Lane Group Flow (vph)      | 0    | 1719  | 490   | 0    | 1166  | 526   | 710   | 0    | 302   | 0    | 0    | 0     |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No   | No    | No   | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left | Right | Left | Left | Right |
| Median Width(ft)           |      | 24    |       |      | 24    |       |       | 24   |       |      | 24   |       |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0    |       |      | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16   |       |      | 16   |       |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |      |       |      |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |      | 9     | 15   |      | 9     |
| Number of Detectors        |      | 2     | 1     |      | 2     | 1     | 1     |      | 1     |      |      |       |
| Detector Template          |      | Thru  | Right |      | Thru  | Right | Left  |      | Right |      |      |       |
| Leading Detector (ft)      |      | 100   | 20    |      | 100   | 20    | 20    |      | 20    |      |      |       |
| Trailing Detector (ft)     |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Position(ft)    |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Size(ft)        |      | 6     | 20    |      | 6     | 20    | 20    |      | 20    |      |      |       |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |      | Cl+Ex | Cl+Ex | Cl+Ex |      | Cl+Ex |      |      |       |
| Detector 1 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 2 Position(ft)    |      | 94    |       |      | 94    |       |       |      |       |      |      |       |
| Detector 2 Size(ft)        |      | 6     |       |      | 6     |       |       |      |       |      |      |       |
| Detector 2 Type            |      | Cl+Ex |       |      | Cl+Ex |       |       |      |       |      |      |       |
| Detector 2 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |      | 0.0   |       |       |      |       |      |      |       |
| Turn Type                  |      | NA    | Perm  |      | NA    | Free  | Prot  |      | Perm  |      |      |       |
| Protected Phases           |      | 2     |       |      | 6     |       | 3     |      |       |      |      |       |
| Permitted Phases           |      |       | 2     |      |       | Free  |       |      | 3     |      |      |       |

Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

PM Year 2045  
 PM Year 2045



| Lane Group              | EBL | EBT   | EBR   | WBL | WBT   | WBR   | NBL   | NBT  | NBR   | SBL | SBT  | SBR |
|-------------------------|-----|-------|-------|-----|-------|-------|-------|------|-------|-----|------|-----|
| Detector Phase          |     | 2     | 2     |     | 6     |       | 3     |      | 3     |     |      |     |
| Switch Phase            |     |       |       |     |       |       |       |      |       |     |      |     |
| Minimum Initial (s)     |     | 5.0   | 5.0   |     | 5.0   |       | 5.0   |      | 5.0   |     |      |     |
| Minimum Split (s)       |     | 36.5  | 36.5  |     | 20.5  |       | 23.5  |      | 23.5  |     |      |     |
| Total Split (s)         |     | 71.0  | 71.0  |     | 71.0  |       | 49.0  |      | 49.0  |     |      |     |
| Total Split (%)         |     | 59.2% | 59.2% |     | 59.2% |       | 40.8% |      | 40.8% |     |      |     |
| Maximum Green (s)       |     | 66.5  | 66.5  |     | 66.5  |       | 44.5  |      | 44.5  |     |      |     |
| Yellow Time (s)         |     | 3.5   | 3.5   |     | 3.5   |       | 3.5   |      | 3.5   |     |      |     |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   |       | 1.0   |      | 1.0   |     |      |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   |       | 0.0   |      | 0.0   |     |      |     |
| Total Lost Time (s)     |     | 4.5   | 4.5   |     | 4.5   |       | 4.5   |      | 4.5   |     |      |     |
| Lead/Lag                |     |       |       |     |       |       |       |      |       |     |      |     |
| Lead-Lag Optimize?      |     |       |       |     |       |       |       |      |       |     |      |     |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   |       | 3.0   |      | 3.0   |     |      |     |
| Recall Mode             |     | C-Max | C-Max |     | C-Max |       | None  |      | None  |     |      |     |
| Walk Time (s)           |     | 7.0   | 7.0   |     |       |       |       |      |       |     |      |     |
| Flash Dont Walk (s)     |     | 25.0  | 25.0  |     |       |       |       |      |       |     |      |     |
| Pedestrian Calls (#/hr) |     | 2     | 2     |     |       |       |       |      |       |     |      |     |
| Act Effct Green (s)     |     | 78.0  | 78.0  |     | 78.0  | 120.0 | 33.0  |      | 33.0  |     |      |     |
| Actuated g/C Ratio      |     | 0.65  | 0.65  |     | 0.65  | 1.00  | 0.28  |      | 0.28  |     |      |     |
| v/c Ratio               |     | 0.59  | 0.52  |     | 0.37  | 0.35  | 0.79  |      | 0.71  |     |      |     |
| Control Delay           |     | 6.8   | 4.1   |     | 3.4   | 0.5   | 46.9  |      | 45.0  |     |      |     |
| Queue Delay             |     | 0.2   | 0.4   |     | 0.0   | 0.0   | 0.0   |      | 0.0   |     |      |     |
| Total Delay             |     | 7.0   | 4.5   |     | 3.4   | 0.5   | 46.9  |      | 45.0  |     |      |     |
| LOS                     |     | A     | A     |     | A     | A     | D     |      | D     |     |      |     |
| Approach Delay          |     | 6.4   |       |     | 2.5   |       |       | 46.4 |       |     |      |     |
| Approach LOS            |     | A     |       |     | A     |       |       | D    |       |     |      |     |
| Queue Length 50th (ft)  |     | 132   | 41    |     | 47    | 0     | 261   |      | 196   |     |      |     |
| Queue Length 95th (ft)  |     | 160   | 67    |     | 71    | 0     | 305   |      | 275   |     |      |     |
| Internal Link Dist (ft) |     | 518   |       |     | 574   |       |       | 751  |       |     | 1036 |     |
| Turn Bay Length (ft)    |     |       | 100   |     |       |       | 215   |      |       |     |      |     |
| Base Capacity (vph)     |     | 2932  | 942   |     | 3130  | 1500  | 1205  |      | 569   |     |      |     |
| Starvation Cap Reductn  |     | 402   | 129   |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Spillback Cap Reductn   |     | 88    | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Reduced v/c Ratio       |     | 0.68  | 0.60  |     | 0.37  | 0.35  | 0.59  |      | 0.53  |     |      |     |

Intersection Summary

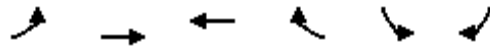
|                                    |   |
|------------------------------------|---|
| Area Type:                         | Other   |
| Cycle Length:                      | 120   |
| Actuated Cycle Length:             | 120   |
| Offset:                            | 10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow |
| Natural Cycle:                     | 60  |
| Control Type:                      | Actuated-Coordinated  |
| Maximum v/c Ratio:                 | 0.79  |
| Intersection Signal Delay:         | 13.3  |
| Intersection LOS:                  | B   |
| Intersection Capacity Utilization: | 65.9%   |
| ICU Level of Service:              | C   |
| Analysis Period (min):             | 15  |

Splits and Phases: 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road



Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

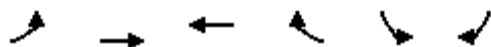
PM Year 2045  
 PM Year 2045



| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SBL   | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑↑   |       | ↓↓↓   | ↓     |
| Traffic Volume (vph)       | 0    | 1919  | 2744  | 0     | 759   | 619   |
| Future Volume (vph)        | 0    | 1919  | 2744  | 0     | 759   | 619   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 0    |       |       | 0     | 0     | 260   |
| Storage Lanes              | 0    |       |       | 0     | 2     | 1     |
| Taper Length (ft)          | 90   |       |       |       | 90    |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.91  | 1.00  | 0.97  | 0.91  |
| Frt                        |      |       |       |       | 0.970 | 0.850 |
| Flt Protected              |      |       |       |       | 0.961 |       |
| Satd. Flow (prot)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Flt Permitted              |      |       |       |       | 0.961 |       |
| Satd. Flow (perm)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Right Turn on Red          |      |       |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |      |       |       |       | 1     | 1     |
| Link Speed (mph)           |      | 45    | 45    |       | 30    |       |
| Link Distance (ft)         |      | 293   | 273   |       | 775   |       |
| Travel Time (s)            |      | 4.4   | 4.1   |       | 17.6  |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 0    | 1919  | 2744  | 0     | 759   | 619   |
| Shared Lane Traffic (%)    |      |       |       |       |       | 30%   |
| Lane Group Flow (vph)      | 0    | 1919  | 2744  | 0     | 945   | 433   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |
| Median Width(ft)           |      | 0     | 0     |       | 24    |       |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    | 16    |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |
| Number of Detectors        |      | 2     | 2     |       | 1     | 1     |
| Detector Template          |      | Thru  | Thru  |       | Left  | Right |
| Leading Detector (ft)      |      | 100   | 100   |       | 20    | 20    |
| Trailing Detector (ft)     |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        |      | 6     | 6     |       | 20    | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |      | 94    | 94    |       |       |       |
| Detector 2 Size(ft)        |      | 6     | 6     |       |       |       |
| Detector 2 Type            |      | Cl+Ex | Cl+Ex |       |       |       |
| Detector 2 Channel         |      |       |       |       |       |       |
| Detector 2 Extend (s)      |      | 0.0   | 0.0   |       |       |       |
| Turn Type                  |      | NA    | NA    |       | Prot  | Prot  |
| Protected Phases           |      | 4     | 8     |       | 6     | 6     |
| Permitted Phases           |      |       |       |       |       |       |

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

PM Year 2045  
 PM Year 2045



| Lane Group              | EBL | EBT   | WBT   | WBR | SBL   | SBR   |
|-------------------------|-----|-------|-------|-----|-------|-------|
| Detector Phase          |     | 4     | 8     |     | 6     | 6     |
| Switch Phase            |     |       |       |     |       |       |
| Minimum Initial (s)     |     | 6.0   | 6.0   |     | 6.0   | 6.0   |
| Minimum Split (s)       |     | 11.0  | 25.0  |     | 11.0  | 11.0  |
| Total Split (s)         |     | 39.0  | 39.0  |     | 21.0  | 21.0  |
| Total Split (%)         |     | 65.0% | 65.0% |     | 35.0% | 35.0% |
| Maximum Green (s)       |     | 34.0  | 34.0  |     | 16.0  | 16.0  |
| Yellow Time (s)         |     | 4.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     |     | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Lead/Lag                |     |       |       |     |       |       |
| Lead-Lag Optimize?      |     |       |       |     |       |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             |     | C-Max | C-Max |     | Max   | Max   |
| Walk Time (s)           |     |       | 7.0   |     |       |       |
| Flash Dont Walk (s)     |     |       | 13.0  |     |       |       |
| Pedestrian Calls (#/hr) |     |       | 2     |     |       |       |
| Act Effct Green (s)     |     | 34.0  | 34.0  |     | 16.0  | 16.0  |
| Actuated g/C Ratio      |     | 0.57  | 0.57  |     | 0.27  | 0.27  |
| v/c Ratio               |     | 0.70  | 1.01  |     | 1.11  | 1.19  |
| Control Delay           |     | 11.1  | 21.0  |     | 90.4  | 135.0 |
| Queue Delay             |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             |     | 11.1  | 21.0  |     | 90.4  | 135.0 |
| LOS                     |     | B     | C     |     | F     | F     |
| Approach Delay          |     | 11.1  | 21.0  |     | 104.4 |       |
| Approach LOS            |     | B     | C     |     | F     |       |
| Queue Length 50th (ft)  |     | 162   | ~358  |     | ~209  | ~216  |
| Queue Length 95th (ft)  |     | 211   | m295  |     | #316  | #389  |
| Internal Link Dist (ft) |     | 213   | 193   |     | 695   |       |
| Turn Bay Length (ft)    |     |       |       |     |       | 260   |
| Base Capacity (vph)     |     | 2730  | 2730  |     | 851   | 364   |
| Starvation Cap Reductn  |     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   |     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       |     | 0.70  | 1.01  |     | 1.11  | 1.19  |

Intersection Summary

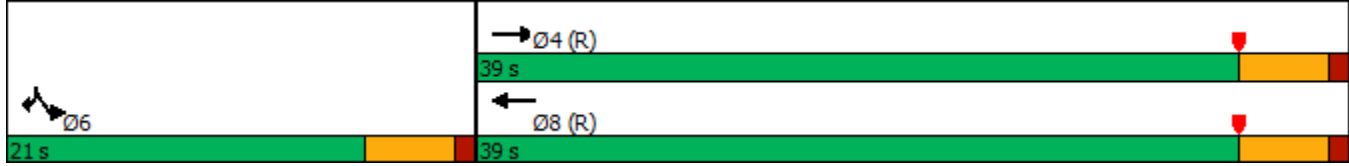
Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 9 (15%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.19  
 Intersection Signal Delay: 36.9  
 Intersection LOS: D  
 Intersection Capacity Utilization 147.5%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

PM Year 2045  
 PM Year 2045

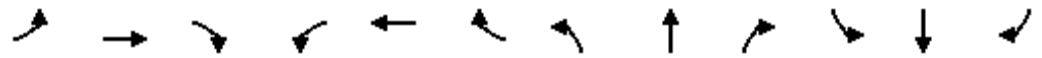
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Imperial Highway & SR-57 SB Off-Ramp



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

PM Year 2045  
 PM Year 2045

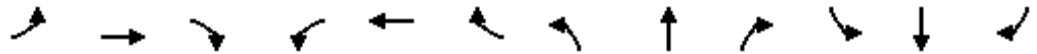


| Lane Group                 | EBL   | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT   | NBR   | SBL  | SBT  | SBR   |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|-------|
| Lane Configurations        |       |       |       |      |       |       |       |       |       |      |      |       |
| Traffic Volume (vph)       | 207   | 2126  | 0     | 0    | 2800  | 46    | 1163  | 72    | 493   | 0    | 0    | 232   |
| Future Volume (vph)        | 207   | 2126  | 0     | 0    | 2800  | 46    | 1163  | 72    | 493   | 0    | 0    | 232   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 260   |       | 0     | 0    |       | 0     | 610   |       | 350   | 0    |      | 0     |
| Storage Lanes              | 1     |       | 0     | 0    |       | 0     | 1     |       | 1     | 0    |      | 2     |
| Taper Length (ft)          | 90    |       |       | 90   |       |       | 90    |       |       | 90   |      |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00 | 0.86  | 0.86  | 0.91  | 0.86  | 0.95  | 1.00 | 1.00 | 0.88  |
| Frt                        |       |       |       |      | 0.998 |       |       | 0.968 | 0.850 |      |      | 0.850 |
| Flt Protected              | 0.950 |       |       |      |       |       | 0.950 | 0.970 |       |      |      |       |
| Satd. Flow (prot)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1425  | 1425  | 0    | 0    | 2640  |
| Flt Permitted              | 0.950 |       |       |      |       |       | 0.950 | 0.970 |       |      |      |       |
| Satd. Flow (perm)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1425  | 1425  | 0    | 0    | 2640  |
| Right Turn on Red          |       |       | Yes   |      |       | Yes   |       |       | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |       |       |       |      | 3     |       |       | 11    | 100   |      |      | 244   |
| Link Speed (mph)           |       | 45    |       |      | 45    |       |       | 30    |       |      |      | 30    |
| Link Distance (ft)         |       | 271   |       |      | 540   |       |       | 932   |       |      |      | 494   |
| Travel Time (s)            |       | 4.1   |       |      | 8.2   |       |       | 21.2  |       |      |      | 11.2  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 207   | 2126  | 0     | 0    | 2800  | 46    | 1163  | 72    | 493   | 0    | 0    | 232   |
| Shared Lane Traffic (%)    |       |       |       |      |       |       | 24%   |       | 19%   |      |      |       |
| Lane Group Flow (vph)      | 207   | 2126  | 0     | 0    | 2846  | 0     | 884   | 445   | 399   | 0    | 0    | 232   |
| Enter Blocked Intersection | No    | No    | No    | No   | No    | No    | No    | No    | No    | No   | No   | No    |
| Lane Alignment             | Left  | Left  | Right | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right |
| Median Width(ft)           |       | 12    |       |      | 12    |       |       | 24    |       |      |      | 24    |
| Link Offset(ft)            |       | 0     |       |      | 0     |       |       | 0     |       |      |      | 0     |
| Crosswalk Width(ft)        |       | 16    |       |      | 16    |       |       | 16    |       |      |      | 16    |
| Two way Left Turn Lane     |       |       |       |      |       |       |       |       |       |      |      |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     |
| Number of Detectors        | 1     | 2     |       |      | 2     |       | 1     | 2     | 1     |      |      | 1     |
| Detector Template          | Left  | Thru  |       |      | Thru  |       | Left  | Thru  | Right |      |      | Right |
| Leading Detector (ft)      | 20    | 100   |       |      | 100   |       | 20    | 100   | 20    |      |      | 20    |
| Trailing Detector (ft)     | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       |      | 6     |       | 20    | 6     | 20    |      |      | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       |      | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |      |      | Cl+Ex |
| Detector 1 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |      | 94    |       |       | 94    |       |      |      |       |
| Detector 2 Size(ft)        |       | 6     |       |      | 6     |       |       | 6     |       |      |      |       |
| Detector 2 Type            |       | Cl+Ex |       |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |
| Detector 2 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 2 Extend (s)      |       | 0.0   |       |      | 0.0   |       |       | 0.0   |       |      |      |       |
| Turn Type                  | Prot  | NA    |       |      | NA    |       | Split | NA    | Prot  |      |      | Prot  |
| Protected Phases           | 7     | 4     |       |      | 8     |       | 2     | 2     | 2     |      |      | 1     |
| Permitted Phases           |       |       |       |      |       |       |       |       |       |      |      |       |



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

PM Year 2045  
 PM Year 2045



| Lane Group              | EBL   | EBT   | EBR | WBL | WBT   | WBR | NBL   | NBT   | NBR   | SBL | SBT | SBR  |
|-------------------------|-------|-------|-----|-----|-------|-----|-------|-------|-------|-----|-----|------|
| Detector Phase          | 7     | 4     |     |     | 8     |     | 2     | 2     | 2     |     |     | 1    |
| Switch Phase            |       |       |     |     |       |     |       |       |       |     |     |      |
| Minimum Initial (s)     | 6.0   | 6.0   |     |     | 6.0   |     | 6.0   | 6.0   | 6.0   |     |     | 6.0  |
| Minimum Split (s)       | 10.0  | 32.0  |     |     | 28.0  |     | 11.0  | 11.0  | 11.0  |     |     | 11.0 |
| Total Split (s)         | 16.0  | 72.0  |     |     | 56.0  |     | 37.0  | 37.0  | 37.0  |     |     | 11.0 |
| Total Split (%)         | 13.3% | 60.0% |     |     | 46.7% |     | 30.8% | 30.8% | 30.8% |     |     | 9.2% |
| Maximum Green (s)       | 12.0  | 67.0  |     |     | 51.0  |     | 32.0  | 32.0  | 32.0  |     |     | 6.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     |     | 4.0   |     | 4.0   | 4.0   | 4.0   |     |     | 4.0  |
| All-Red Time (s)        | 1.0   | 1.0   |     |     | 1.0   |     | 1.0   | 1.0   | 1.0   |     |     | 1.0  |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0  |
| Total Lost Time (s)     | 4.0   | 5.0   |     |     | 5.0   |     | 5.0   | 5.0   | 5.0   |     |     | 5.0  |
| Lead/Lag                | Lead  |       |     |     | Lag   |     | Lag   | Lag   | Lag   |     |     | Lead |
| Lead-Lag Optimize?      | Yes   |       |     |     | Yes   |     | Yes   | Yes   | Yes   |     |     | Yes  |
| Vehicle Extension (s)   | 3.0   | 3.0   |     |     | 3.0   |     | 3.0   | 3.0   | 3.0   |     |     | 3.0  |
| Recall Mode             | None  | C-Max |     |     | C-Max |     | Max   | Max   | Max   |     |     | None |
| Walk Time (s)           |       | 7.0   |     |     | 7.0   |     |       |       |       |     |     |      |
| Flash Dont Walk (s)     |       | 20.0  |     |     | 16.0  |     |       |       |       |     |     |      |
| Pedestrian Calls (#/hr) |       | 2     |     |     | 2     |     |       |       |       |     |     |      |
| Act Effct Green (s)     | 12.0  | 67.0  |     |     | 51.0  |     | 32.0  | 32.0  | 32.0  |     |     | 6.0  |
| Actuated g/C Ratio      | 0.10  | 0.56  |     |     | 0.42  |     | 0.27  | 0.27  | 0.27  |     |     | 0.05 |
| v/c Ratio               | 1.24  | 0.79  |     |     | 1.10  |     | 1.09  | 1.15  | 0.88  |     |     | 0.64 |
| Control Delay           | 175.6 | 20.2  |     |     | 60.7  |     | 99.7  | 131.5 | 53.3  |     |     | 14.5 |
| Queue Delay             | 0.0   | 47.6  |     |     | 0.1   |     | 0.0   | 0.1   | 3.4   |     |     | 0.0  |
| Total Delay             | 175.6 | 67.7  |     |     | 60.8  |     | 99.7  | 131.5 | 56.7  |     |     | 14.5 |
| LOS                     | F     | E     |     |     | E     |     | F     | F     | E     |     |     | B    |
| Approach Delay          |       | 77.3  |     |     | 60.8  |     |       | 98.0  |       |     |     | 14.5 |
| Approach LOS            |       | E     |     |     | E     |     |       | F     |       |     |     | B    |
| Queue Length 50th (ft)  | ~199  | 412   |     |     | ~707  |     | ~422  | ~463  | 243   |     |     | 0    |
| Queue Length 95th (ft)  | m#291 | m451  |     |     | m149  |     | #558  | #706  | #436  |     |     | 38   |
| Internal Link Dist (ft) |       | 191   |     |     | 460   |     |       | 852   |       |     |     | 414  |
| Turn Bay Length (ft)    | 260   |       |     |     |       |     | 610   |       | 350   |     |     |      |
| Base Capacity (vph)     | 167   | 2690  |     |     | 2576  |     | 813   | 388   | 453   |     |     | 363  |
| Starvation Cap Reductn  | 0     | 0     |     |     | 85    |     | 0     | 0     | 0     |     |     | 0    |
| Spillback Cap Reductn   | 0     | 1019  |     |     | 0     |     | 0     | 2     | 20    |     |     | 0    |
| Storage Cap Reductn     | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0    |
| Reduced v/c Ratio       | 1.24  | 1.27  |     |     | 1.14  |     | 1.09  | 1.15  | 0.92  |     |     | 0.64 |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 12 (10%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.24  
 Intersection Signal Delay: 73.7  
 Intersection LOS: E  
 Intersection Capacity Utilization 94.9%  
 ICU Level of Service F  
 Analysis Period (min) 15

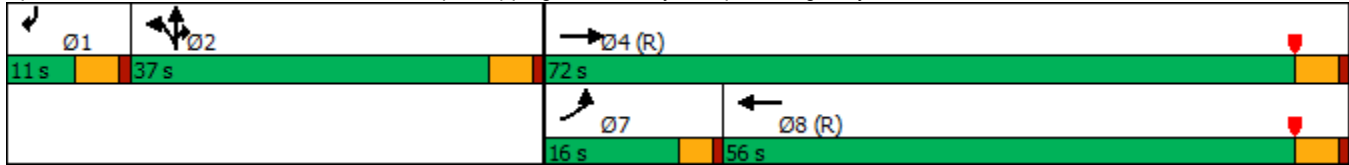
~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

PM Year 2045  
 PM Year 2045

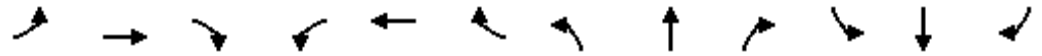
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway



Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

PM Year 2045  
PM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 311   | 2147  | 161   | 209   | 1983  | 213   | 252   | 286   | 101   | 335   | 393   | 294   |
| Future Volume (vph)        | 311   | 2147  | 161   | 209   | 1983  | 213   | 252   | 286   | 101   | 335   | 393   | 294   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 340   |       | 0     | 200   |       | 0     | 170   |       | 0     | 210   |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 1.00  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 1.00  | 1.00  |
| Frt                        |       | 0.990 |       |       | 0.985 |       |       | 0.961 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4769  | 0     | 1676  | 4745  | 0     | 3252  | 3222  | 0     | 3252  | 1765  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4769  | 0     | 1676  | 4745  | 0     | 3252  | 3222  | 0     | 3252  | 1765  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 12    |       |       | 17    |       |       | 42    |       |       |       | 234   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 540   |       |       | 1433  |       |       | 1004  |       |       |       | 3109  |
| Travel Time (s)            |       | 12.3  |       |       | 32.6  |       |       | 22.8  |       |       |       | 70.7  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 311   | 2147  | 161   | 209   | 1983  | 213   | 252   | 286   | 101   | 335   | 393   | 294   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 311   | 2308  | 0     | 209   | 2196  | 0     | 252   | 387   | 0     | 335   | 393   | 294   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 12    |       |       | 12    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

PM Year 2045  
PM Year 2045



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 37.0  |     | 10.0  | 40.0  |     | 10.0  | 41.0  | 41.0  |
| Total Split (s)         | 18.0  | 53.0  |     | 14.0  | 49.0  |     | 12.0  | 40.0  |     | 13.0  | 41.0  | 41.0  |
| Total Split (%)         | 15.0% | 44.2% |     | 11.7% | 40.8% |     | 10.0% | 33.3% |     | 10.8% | 34.2% | 34.2% |
| Maximum Green (s)       | 14.0  | 48.0  |     | 10.0  | 44.0  |     | 8.0   | 35.0  |     | 9.0   | 36.0  | 36.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 25.0  |     |       | 28.0  |     |       | 29.0  | 29.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 14.0  | 48.0  |     | 10.0  | 44.0  |     | 8.0   | 35.0  |     | 9.0   | 36.0  | 36.0  |
| Actuated g/C Ratio      | 0.12  | 0.40  |     | 0.08  | 0.37  |     | 0.07  | 0.29  |     | 0.08  | 0.30  | 0.30  |
| v/c Ratio               | 1.59  | 1.21  |     | 1.50  | 1.25  |     | 1.17  | 0.40  |     | 1.38  | 0.74  | 0.48  |
| Control Delay           | 310.2 | 119.5 |     | 282.9 | 143.8 |     | 162.1 | 31.6  |     | 220.9 | 24.8  | 3.7   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.6   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.1   |
| Total Delay             | 310.2 | 119.5 |     | 282.9 | 144.4 |     | 162.1 | 31.6  |     | 220.9 | 24.8  | 3.7   |
| LOS                     | F     | F     |     | F     | F     |     | F     | C     |     | F     | C     | A     |
| Approach Delay          |       | 142.1 |     |       | 156.5 |     |       | 83.1  |     |       | 83.0  |       |
| Approach LOS            |       | F     |     |       | F     |     |       | F     |     |       | F     |       |
| Queue Length 50th (ft)  | ~343  | ~788  |     | ~222  | ~779  |     | ~119  | 112   |     | ~181  | 187   | 23    |
| Queue Length 95th (ft)  | m#463 | m#880 |     | m#311 | #885  |     | #205  | 158   |     | m#187 | m190  | m25   |
| Internal Link Dist (ft) |       | 460   |     |       | 1353  |     |       | 924   |     |       | 3029  |       |
| Turn Bay Length (ft)    | 340   |       |     | 200   |       |     | 170   |       |     | 210   |       |       |
| Base Capacity (vph)     | 195   | 1914  |     | 139   | 1750  |     | 216   | 969   |     | 243   | 529   | 613   |
| Starvation Cap Reductn  | 0     | 26    |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 301   |     | 0     | 0     |     | 0     | 0     | 14    |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.59  | 1.22  |     | 1.50  | 1.52  |     | 1.17  | 0.40  |     | 1.38  | 0.74  | 0.49  |

Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 4 (3%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.59   |
| Intersection Signal Delay:         | 132.6  |
| Intersection LOS:                  | F  |
| Intersection Capacity Utilization: | 108.1%   |
| ICU Level of Service:              | G  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 18: Associated Road & Imperial Highway

PM Year 2045  
 PM Year 2045

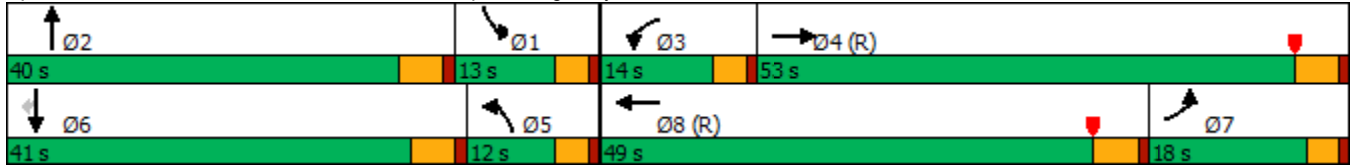
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Associated Road & Imperial Highway



Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

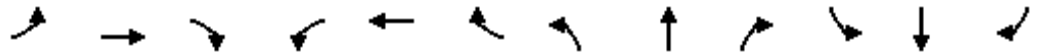
PM Year 2045  
 PM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 22    | 2161  | 323   | 267   | 2241  | 66    | 295   | 54    | 307   | 29    | 26    | 16    |
| Future Volume (vph)        | 22    | 2161  | 323   | 267   | 2241  | 66    | 295   | 54    | 307   | 29    | 26    | 16    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 140   |       | 200   | 225   |       | 0     | 195   |       | 0     | 85    |       | 0     |
| Storage Lanes              | 1     |       | 1     | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00  | 0.91  | 0.91  | 0.95  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       |       | 0.850 |       | 0.996 |       |       |       | 0.850 |       | 0.943 |       |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.967 |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4818  | 1500  | 1676  | 4798  | 0     | 1593  | 1621  | 1500  | 1676  | 1664  | 0     |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.967 |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4818  | 1500  | 1676  | 4798  | 0     | 1593  | 1621  | 1500  | 1676  | 1664  | 0     |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 200   |       | 6     |       |       |       | 307   |       | 16    |       |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 1433  |       |       | 3487  |       |       | 2609  |       |       | 962   |       |
| Travel Time (s)            |       | 32.6  |       |       | 79.3  |       |       | 59.3  |       |       | 21.9  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 22    | 2161  | 323   | 267   | 2241  | 66    | 295   | 54    | 307   | 29    | 26    | 16    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       | 41%   |       |       |       |       |       |
| Lane Group Flow (vph)      | 22    | 2161  | 323   | 267   | 2307  | 0     | 174   | 175   | 307   | 29    | 42    | 0     |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 12    |       |       | 12    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    |       | Split | NA    | Perm  | Split | NA    |       |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       |       |       |       | 2     |       |       |       |

Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

PM Year 2045  
 PM Year 2045



| Lane Group              | EBL  | EBT   | EBR   | WBL   | WBT   | WBR | NBL   | NBT   | NBR   | SBL  | SBT  | SBR |
|-------------------------|------|-------|-------|-------|-------|-----|-------|-------|-------|------|------|-----|
| Detector Phase          | 7    | 4     | 4     | 3     | 8     |     | 2     | 2     | 2     | 6    | 6    |     |
| Switch Phase            |      |       |       |       |       |     |       |       |       |      |      |     |
| Minimum Initial (s)     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0  | 6.0  |     |
| Minimum Split (s)       | 10.0 | 33.0  | 33.0  | 10.0  | 26.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (s)         | 10.0 | 59.0  | 59.0  | 23.0  | 72.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (%)         | 8.3% | 49.2% | 49.2% | 19.2% | 60.0% |     | 22.5% | 22.5% | 22.5% | 9.2% | 9.2% |     |
| Maximum Green (s)       | 6.0  | 54.0  | 54.0  | 19.0  | 67.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Yellow Time (s)         | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   |     | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |     |
| All-Red Time (s)        | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0  | 1.0  |     |
| Lost Time Adjust (s)    | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Lost Time (s)     | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   |     | 5.0   | 5.0   | 5.0   | 5.0  | 5.0  |     |
| Lead/Lag                | Lead | Lead  | Lead  | Lag   | Lag   |     |       |       |       |      |      |     |
| Lead-Lag Optimize?      | Yes  | Yes   | Yes   | Yes   | Yes   |     |       |       |       |      |      |     |
| Vehicle Extension (s)   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |     |
| Recall Mode             | None | C-Max | C-Max | None  | C-Max |     | Max   | Max   | Max   | Max  | Max  |     |
| Walk Time (s)           |      | 7.0   | 7.0   |       | 7.0   |     | 7.0   | 7.0   | 7.0   |      |      |     |
| Flash Dont Walk (s)     |      | 21.0  | 21.0  |       | 14.0  |     | 15.0  | 15.0  | 15.0  |      |      |     |
| Pedestrian Calls (#/hr) |      | 2     | 2     |       | 2     |     | 2     | 2     | 2     |      |      |     |
| Act Effct Green (s)     | 6.0  | 54.0  | 54.0  | 19.0  | 71.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Actuated g/C Ratio      | 0.05 | 0.45  | 0.45  | 0.16  | 0.59  |     | 0.18  | 0.18  | 0.18  | 0.05 | 0.05 |     |
| v/c Ratio               | 0.27 | 1.00  | 0.41  | 1.01  | 0.81  |     | 0.60  | 0.59  | 0.58  | 0.35 | 0.43 |     |
| Control Delay           | 82.5 | 13.5  | 1.2   | 69.9  | 4.3   |     | 54.4  | 54.0  | 9.6   | 67.0 | 52.3 |     |
| Queue Delay             | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Delay             | 82.5 | 13.5  | 1.2   | 69.9  | 4.3   |     | 54.4  | 54.0  | 9.6   | 67.0 | 52.3 |     |
| LOS                     | F    | B     | A     | E     | A     |     | D     | D     | A     | E    | D    |     |
| Approach Delay          |      | 12.5  |       |       | 11.1  |     |       | 33.3  |       |      | 58.3 |     |
| Approach LOS            |      | B     |       |       | B     |     |       | C     |       |      | E    |     |
| Queue Length 50th (ft)  | 18   | 112   | 10    | ~201  | 115   |     | 131   | 131   | 0     | 22   | 20   |     |
| Queue Length 95th (ft)  | m16  | m93   | m7    | m#223 | m116  |     | 212   | 212   | 82    | 55   | 58   |     |
| Internal Link Dist (ft) |      | 1353  |       |       | 3407  |     |       | 2529  |       |      | 882  |     |
| Turn Bay Length (ft)    | 140  |       | 200   | 225   |       |     | 195   |       |       | 85   |      |     |
| Base Capacity (vph)     | 83   | 2168  | 785   | 265   | 2841  |     | 292   | 297   | 525   | 83   | 98   |     |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Spillback Cap Reductn   | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Storage Cap Reductn     | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Reduced v/c Ratio       | 0.27 | 1.00  | 0.41  | 1.01  | 0.81  |     | 0.60  | 0.59  | 0.58  | 0.35 | 0.43 |     |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 55 (46%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 14.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 88.1%  
 ICU Level of Service E  
 Analysis Period (min) 15

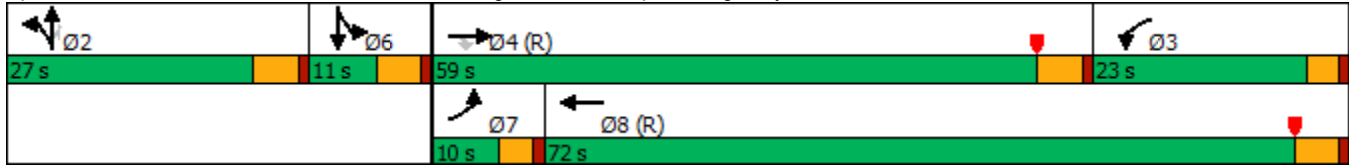
~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

PM Year 2045  
 PM Year 2045

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Placentia Avenue/Castlegate Lane & Imperial Highway





Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

PM Year 2045  
PM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↔↔    | ↕↕↔   |       | ↔↔    | ↕↕↔   |       | ↔↔    | ↕↔    |       | ↔↔    | ↕↕    | ↔     |
| Traffic Volume (vph)       | 247   | 1596  | 251   | 211   | 1780  | 364   | 418   | 671   | 118   | 300   | 519   | 133   |
| Future Volume (vph)        | 247   | 1596  | 251   | 211   | 1780  | 364   | 418   | 671   | 118   | 300   | 519   | 133   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 185   |       | 0     | 220   |       | 0     | 150   |       | 0     | 205   |       | 0     |
| Storage Lanes              | 2     |       | 0     | 2     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 0.91  | 0.97  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.980 |       |       | 0.975 |       |       | 0.978 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4721  | 0     | 3252  | 4697  | 0     | 3252  | 3279  | 0     | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4721  | 0     | 3252  | 4697  | 0     | 3252  | 3279  | 0     | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 31    |       |       | 46    |       |       | 16    |       |       |       | 136   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3487  |       |       | 3626  |       |       | 1318  |       |       |       | 1319  |
| Travel Time (s)            |       | 79.3  |       |       | 82.4  |       |       | 30.0  |       |       |       | 30.0  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 247   | 1596  | 251   | 211   | 1780  | 364   | 418   | 671   | 118   | 300   | 519   | 133   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 247   | 1847  | 0     | 211   | 2144  | 0     | 418   | 789   | 0     | 300   | 519   | 133   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

PM Year 2045  
PM Year 2045



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 40.0  |     | 10.0  | 31.0  |     | 10.0  | 31.0  | 31.0  |
| Total Split (s)         | 13.0  | 56.0  |     | 14.0  | 57.0  |     | 19.0  | 35.0  |     | 15.0  | 31.0  | 31.0  |
| Total Split (%)         | 10.8% | 46.7% |     | 11.7% | 47.5% |     | 15.8% | 29.2% |     | 12.5% | 25.8% | 25.8% |
| Maximum Green (s)       | 9.0   | 51.0  |     | 10.0  | 52.0  |     | 15.0  | 30.0  |     | 11.0  | 26.0  | 26.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 28.0  |     |       | 19.0  |     |       | 19.0  | 19.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 9.0   | 51.0  |     | 10.0  | 52.0  |     | 15.0  | 30.0  |     | 11.0  | 26.0  | 26.0  |
| Actuated g/C Ratio      | 0.08  | 0.42  |     | 0.08  | 0.43  |     | 0.12  | 0.25  |     | 0.09  | 0.22  | 0.22  |
| v/c Ratio               | 1.02  | 0.91  |     | 0.78  | 1.04  |     | 1.03  | 0.95  |     | 1.01  | 0.71  | 0.31  |
| Control Delay           | 70.1  | 10.4  |     | 92.7  | 41.8  |     | 103.8 | 64.8  |     | 108.0 | 37.9  | 5.8   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 70.1  | 10.4  |     | 92.7  | 41.8  |     | 103.8 | 64.8  |     | 108.0 | 37.9  | 5.8   |
| LOS                     | E     | B     |     | F     | D     |     | F     | E     |     | F     | D     | A     |
| Approach Delay          |       | 17.4  |     |       | 46.3  |     |       | 78.3  |     |       | 55.5  |       |
| Approach LOS            |       | B     |     |       | D     |     |       | E     |     |       | E     |       |
| Queue Length 50th (ft)  | ~94   | 59    |     | 88    | ~636  |     | ~178  | 312   |     | ~129  | 195   | 13    |
| Queue Length 95th (ft)  | m#112 | m99   |     | m109  | #728  |     | #281  | #439  |     | #222  | 259   | m52   |
| Internal Link Dist (ft) |       | 3407  |     |       | 3546  |     |       | 1238  |     |       | 1239  |       |
| Turn Bay Length (ft)    | 185   |       |     | 220   |       |     | 150   |       |     | 205   |       |       |
| Base Capacity (vph)     | 243   | 2026  |     | 271   | 2061  |     | 406   | 831   |     | 298   | 726   | 431   |
| Starvation Cap Reductn  | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.02  | 0.91  |     | 0.78  | 1.04  |     | 1.03  | 0.95  |     | 1.01  | 0.71  | 0.31  |

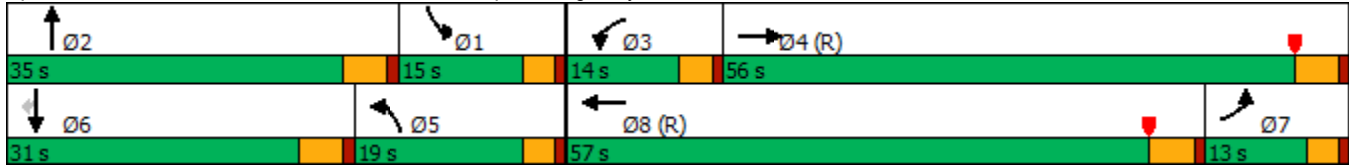
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 119 (99%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.04  
 Intersection Signal Delay: 44.3  
 Intersection LOS: D  
 Intersection Capacity Utilization 99.9%  
 ICU Level of Service F  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Kraemer Boulevard & Imperial Highway



Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

PM Year 2045  
 PM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑    | ↔     | ↔↔    | ↑↑    | ↔     |
| Traffic Volume (vph)       | 237   | 2032  | 171   | 189   | 1478  | 144   | 131   | 271   | 145   | 234   | 229   | 132   |
| Future Volume (vph)        | 237   | 2032  | 171   | 189   | 1478  | 144   | 131   | 271   | 145   | 234   | 229   | 132   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Storage Lanes              | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 1.00  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 152   |       |       | 144   |       |       | 136   |       |       | 136   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3626  |       |       | 3640  |       |       | 1142  |       |       |       | 3502  |
| Travel Time (s)            |       | 82.4  |       |       | 82.7  |       |       | 26.0  |       |       |       | 79.6  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 237   | 2032  | 171   | 189   | 1478  | 144   | 131   | 271   | 145   | 234   | 229   | 132   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 237   | 2032  | 171   | 189   | 1478  | 144   | 131   | 271   | 145   | 234   | 229   | 132   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

PM Year 2045  
 PM Year 2045



| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     | 4     | 3     | 8     | 8     | 5    | 2     | 2     | 1     | 6     | 6     |
| Switch Phase            |       |       |       |       |       |       |      |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  | 38.0  | 10.0  | 40.0  | 40.0  | 10.0 | 47.0  | 47.0  | 10.0  | 49.0  | 49.0  |
| Total Split (s)         | 15.0  | 51.0  | 51.0  | 10.0  | 46.0  | 46.0  | 10.0 | 47.0  | 47.0  | 12.0  | 49.0  | 49.0  |
| Total Split (%)         | 12.5% | 42.5% | 42.5% | 8.3%  | 38.3% | 38.3% | 8.3% | 39.2% | 39.2% | 10.0% | 40.8% | 40.8% |
| Maximum Green (s)       | 11.0  | 46.0  | 46.0  | 6.0   | 41.0  | 41.0  | 6.0  | 42.0  | 42.0  | 8.0   | 44.0  | 44.0  |
| Yellow Time (s)         | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lag  | Lead  | Lead  | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes  | Yes   | Yes   | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max | C-Max | None  | C-Max | C-Max | None | Max   | Max   | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   | 7.0   |       | 7.0   | 7.0   |      | 7.0   | 7.0   |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  | 26.0  |       | 28.0  | 28.0  |      | 35.0  | 35.0  |       | 37.0  | 37.0  |
| Pedestrian Calls (#/hr) |       | 2     | 2     |       | 2     | 2     |      | 2     | 2     |       | 2     | 2     |
| Act Effct Green (s)     | 10.9  | 46.0  | 46.0  | 6.0   | 41.1  | 41.1  | 6.0  | 42.0  | 42.0  | 8.0   | 44.0  | 44.0  |
| Actuated g/C Ratio      | 0.09  | 0.38  | 0.38  | 0.05  | 0.34  | 0.34  | 0.05 | 0.35  | 0.35  | 0.07  | 0.37  | 0.37  |
| v/c Ratio               | 0.80  | 1.10  | 0.26  | 1.17  | 0.90  | 0.24  | 0.81 | 0.23  | 0.24  | 1.08  | 0.19  | 0.21  |
| Control Delay           | 61.0  | 90.0  | 13.3  | 126.8 | 14.1  | 1.3   | 90.5 | 28.2  | 6.3   | 132.9 | 23.8  | 5.1   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 61.0  | 90.0  | 13.3  | 126.8 | 14.1  | 1.3   | 90.5 | 28.2  | 6.3   | 132.9 | 23.8  | 5.1   |
| LOS                     | E     | F     | B     | F     | B     | A     | F    | C     | A     | F     | C     | A     |
| Approach Delay          |       | 81.8  |       |       | 24.9  |       |      | 37.3  |       |       | 62.6  |       |
| Approach LOS            |       | F     |       |       | C     |       |      | D     |       |       | E     |       |
| Queue Length 50th (ft)  | 98    | ~650  | 48    | ~85   | 119   | 3     | 52   | 77    | 5     | ~105  | 58    | 17    |
| Queue Length 95th (ft)  | m113  | m#733 | m66   | m#95  | m146  | m3    | #107 | 111   | 49    | m#180 | m98   | m20   |
| Internal Link Dist (ft) |       | 3546  |       |       | 3560  |       |      | 1062  |       |       | 3422  |       |
| Turn Bay Length (ft)    | 190   |       | 315   | 260   |       | 305   | 150  |       | 150   | 240   |       | 185   |
| Base Capacity (vph)     | 298   | 1846  | 668   | 162   | 1650  | 608   | 162  | 1173  | 613   | 216   | 1229  | 636   |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.80  | 1.10  | 0.26  | 1.17  | 0.90  | 0.24  | 0.81 | 0.23  | 0.24  | 1.08  | 0.19  | 0.21  |

Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 26 (22%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.17   |
| Intersection Signal Delay:         | 56.1   |
| Intersection LOS:                  | E  |
| Intersection Capacity Utilization: | 77.1%  |
| ICU Level of Service:              | D  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

21: Valencia Avenue/ Valencia Avenue & Imperial Highway

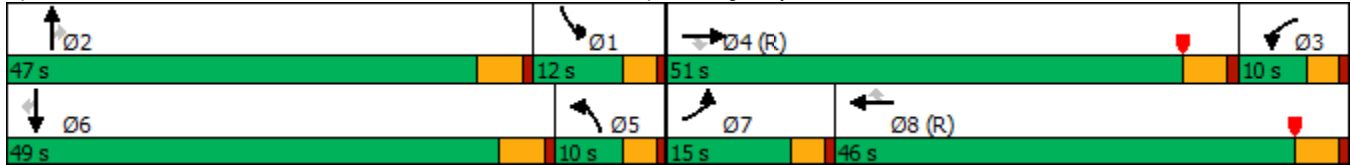
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Valencia Avenue/ Valencia Avenue & Imperial Highway



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

PM Year 2045  
PM Year 2045



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 77    | 1994  | 315   | 176   | 1553  | 862   | 306   | 561   | 143   | 1019  | 487   | 22    |
| Future Volume (vph)        | 77    | 1994  | 315   | 176   | 1553  | 862   | 306   | 561   | 143   | 1019  | 487   | 22    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.980 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 27    |       |       |       | 276   |       |       | 136   |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       | 1486  |       |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       | 33.8  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 77    | 1994  | 315   | 176   | 1553  | 862   | 306   | 561   | 143   | 1019  | 487   | 22    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 77    | 2309  | 0     | 176   | 1553  | 862   | 306   | 561   | 143   | 1019  | 487   | 22    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       | 24    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

PM Year 2045  
PM Year 2045



| Lane Group              | EBL  | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL    | SBT    | SBR   |
|-------------------------|------|-------|-----|-------|-------|-------|-------|-------|-------|--------|--------|-------|
| Detector Phase          | 7    | 4     |     | 3     | 8     | 8     | 5     | 2     | 2     | 1      | 6      | 6     |
| Switch Phase            |      |       |     |       |       |       |       |       |       |        |        |       |
| Minimum Initial (s)     | 6.0  | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0    | 6.0    | 6.0   |
| Minimum Split (s)       | 10.0 | 46.0  |     | 10.0  | 38.0  | 38.0  | 10.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (s)         | 10.0 | 46.0  |     | 10.0  | 46.0  | 46.0  | 16.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (%)         | 8.3% | 38.3% |     | 8.3%  | 38.3% | 38.3% | 13.3% | 45.0% | 45.0% | 8.3%   | 40.0%  | 40.0% |
| Maximum Green (s)       | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Yellow Time (s)         | 3.0  | 4.0   |     | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0    | 4.0    | 4.0   |
| All-Red Time (s)        | 1.0  | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    | 1.0    | 1.0   |
| Lost Time Adjust (s)    | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Lost Time (s)     | 4.0  | 5.0   |     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0    | 5.0    | 5.0   |
| Lead/Lag                | Lag  | Lag   |     | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead   | Lead   | Lead  |
| Lead-Lag Optimize?      | Yes  | Yes   |     | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes    | Yes    | Yes   |
| Vehicle Extension (s)   | 3.0  | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0    | 3.0    | 3.0   |
| Recall Mode             | None | C-Max |     | None  | C-Max | C-Max | None  | Max   | Max   | None   | Max    | Max   |
| Walk Time (s)           |      | 7.0   |     |       | 7.0   | 7.0   |       | 7.0   | 7.0   |        | 7.0    | 7.0   |
| Flash Dont Walk (s)     |      | 34.0  |     |       | 26.0  | 26.0  |       | 42.0  | 42.0  |        | 36.0   | 36.0  |
| Pedestrian Calls (#/hr) |      | 2     |     |       | 2     | 2     |       | 2     | 2     |        | 2      | 2     |
| Act Effct Green (s)     | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Actuated g/C Ratio      | 0.05 | 0.34  |     | 0.05  | 0.34  | 0.34  | 0.10  | 0.41  | 0.41  | 0.05   | 0.36   | 0.36  |
| v/c Ratio               | 0.93 | 1.42  |     | 1.09  | 0.94  | 1.24  | 0.94  | 0.41  | 0.21  | 6.29   | 0.41   | 0.03  |
| Control Delay           | 66.3 | 215.2 |     | 148.5 | 51.0  | 145.8 | 91.0  | 26.4  | 5.0   | 2397.5 | 31.0   | 0.0   |
| Queue Delay             | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Delay             | 66.3 | 215.2 |     | 148.5 | 51.0  | 145.8 | 91.0  | 26.4  | 5.0   | 2397.5 | 31.0   | 0.0   |
| LOS                     | E    | F     |     | F     | D     | F     | F     | C     | A     | F      | C      | A     |
| Approach Delay          |      | 210.4 |     |       | 89.1  |       |       | 42.9  |       |        | 1608.7 |       |
| Approach LOS            |      | F     |     |       | F     |       |       | D     |       |        | F      |       |
| Queue Length 50th (ft)  | 56   | ~854  |     | ~78   | 425   | ~683  | 123   | 160   | 3     | ~786   | 120    | 0     |
| Queue Length 95th (ft)  | m53  | m#746 |     | #153  | #527  | #932  | #212  | 209   | 43    | m#731  | m112   | m0    |
| Internal Link Dist (ft) |      | 3560  |     |       | 1794  |       |       | 838   |       |        | 1406   |       |
| Turn Bay Length (ft)    | 220  |       |     | 230   |       | 270   | 135   |       | 100   | 185    |        | 50    |
| Base Capacity (vph)     | 83   | 1630  |     | 162   | 1646  | 694   | 325   | 1369  | 692   | 162    | 1201   | 630   |
| Starvation Cap Reductn  | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Spillback Cap Reductn   | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Storage Cap Reductn     | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Reduced v/c Ratio       | 0.93 | 1.42  |     | 1.09  | 0.94  | 1.24  | 0.94  | 0.41  | 0.21  | 6.29   | 0.41   | 0.03  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 80 (67%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 6.29  
 Intersection Signal Delay: 430.4  
 Intersection LOS: F  
 Intersection Capacity Utilization 115.4%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.



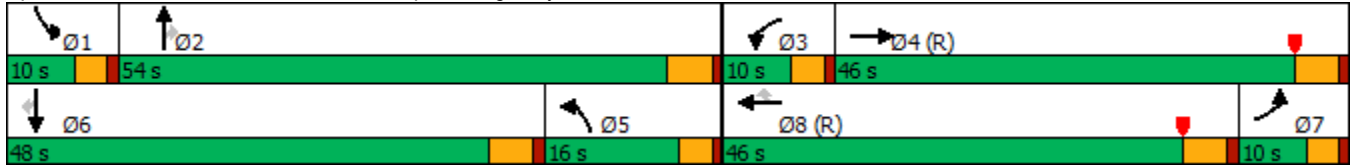
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Rose Drive & Imperial Highway



*APPENDIX F-V*

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

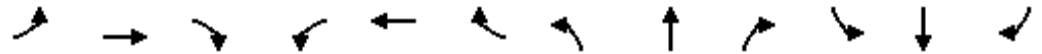
AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group                 | EBL  | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR   | SBL   | SBT  | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑    | ↑↑    | ↑↑↑   |       |      |      |       | ↑↑    |      | ↑↑    |
| Traffic Volume (vph)       | 0    | 1954  | 650   | 289   | 2287  | 0     | 0    | 0    | 0     | 1084  | 0    | 730   |
| Future Volume (vph)        | 0    | 1954  | 650   | 289   | 2287  | 0     | 0    | 0    | 0     | 1084  | 0    | 730   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  | 1800  | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 0     | 70    |       | 0     | 0    |      | 0     | 0     |      | 0     |
| Storage Lanes              | 0    |       | 2     | 2     |       | 0     | 0    |      | 0     | 2     |      | 2     |
| Taper Length (ft)          | 90   |       |       | 90    |       |       | 90   |      |       | 90    |      |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.88  | 0.97  | 0.91  | 1.00  | 1.00 | 1.00 | 1.00  | 0.97  | 1.00 | 0.88  |
| Frt                        |      |       | 0.850 |       |       |       |      |      |       |       |      | 0.850 |
| Flt Protected              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (prot)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Flt Permitted              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (perm)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Right Turn on Red          |      |       | Yes   |       |       | Yes   |      |      | Yes   |       |      | Yes   |
| Satd. Flow (RTOR)          |      |       | 526   |       |       |       |      |      |       |       |      | 55    |
| Link Speed (mph)           |      | 45    |       |       | 45    |       |      | 30   |       |       | 30   |       |
| Link Distance (ft)         |      | 453   |       |       | 598   |       |      | 824  |       |       | 1360 |       |
| Travel Time (s)            |      | 6.9   |       |       | 9.1   |       |      | 18.7 |       |       | 30.9 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1954  | 650   | 289   | 2287  | 0     | 0    | 0    | 0     | 1084  | 0    | 730   |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |      |      |       |       |      |       |
| Lane Group Flow (vph)      | 0    | 1954  | 650   | 289   | 2287  | 0     | 0    | 0    | 0     | 1084  | 0    | 730   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    | No   | No   | No    | No    | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right | Left  | Left | Right |
| Median Width(ft)           |      | 24    |       |       | 24    |       |      | 24   |       |       | 24   |       |
| Link Offset(ft)            |      | 0     |       |       | 0     |       |      | 0    |       |       | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |       | 16    |       |      | 16   |       |       | 16   |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |      |      |       |       |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     | 15    |      | 9     |
| Number of Detectors        |      | 2     | 1     | 1     | 2     |       |      |      |       | 1     |      | 1     |
| Detector Template          |      | Thru  | Right | Left  | Thru  |       |      |      |       | Left  |      | Right |
| Leading Detector (ft)      |      | 100   | 20    | 20    | 100   |       |      |      |       | 20    |      | 20    |
| Trailing Detector (ft)     |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Size(ft)        |      | 6     | 20    | 20    | 6     |       |      |      |       | 20    |      | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |      |      |       | Cl+Ex |      | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 2 Position(ft)    |      | 94    |       |       | 94    |       |      |      |       |       |      |       |
| Detector 2 Size(ft)        |      | 6     |       |       | 6     |       |      |      |       |       |      |       |
| Detector 2 Type            |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |       |      |       |
| Detector 2 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |       | 0.0   |       |      |      |       |       |      |       |
| Turn Type                  |      | NA    | Perm  | Prot  | NA    |       |      |      |       | Prot  |      | Prot  |
| Protected Phases           |      | 2     |       | 1     | 6     |       |      |      |       | 4     |      | 4     |
| Permitted Phases           |      | 2     |       |       |       |       |      |      |       |       |      |       |

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group              | EBL | EBT   | EBR   | WBL   | WBT   | WBR | NBL | NBT | NBR | SBL   | SBT  | SBR   |
|-------------------------|-----|-------|-------|-------|-------|-----|-----|-----|-----|-------|------|-------|
| Detector Phase          |     | 2     | 2     | 1     | 6     |     |     |     |     | 4     |      | 4     |
| Switch Phase            |     |       |       |       |       |     |     |     |     |       |      |       |
| Minimum Initial (s)     |     | 5.0   | 5.0   | 5.0   | 5.0   |     |     |     |     | 5.0   |      | 5.0   |
| Minimum Split (s)       |     | 20.5  | 20.5  | 9.5   | 31.5  |     |     |     |     | 9.5   |      | 9.5   |
| Total Split (s)         |     | 56.1  | 56.1  | 15.9  | 72.0  |     |     |     |     | 48.0  |      | 48.0  |
| Total Split (%)         |     | 46.8% | 46.8% | 13.3% | 60.0% |     |     |     |     | 40.0% |      | 40.0% |
| Maximum Green (s)       |     | 51.6  | 51.6  | 11.4  | 67.5  |     |     |     |     | 43.5  |      | 43.5  |
| Yellow Time (s)         |     | 3.5   | 3.5   | 3.5   | 3.5   |     |     |     |     | 3.5   |      | 3.5   |
| All-Red Time (s)        |     | 1.0   | 1.0   | 1.0   | 1.0   |     |     |     |     | 1.0   |      | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |     |     |     | 0.0   |      | 0.0   |
| Total Lost Time (s)     |     | 4.5   | 4.5   | 4.5   | 4.5   |     |     |     |     | 4.5   |      | 4.5   |
| Lead/Lag                |     | Lead  | Lead  | Lag   |       |     |     |     |     |       |      |       |
| Lead-Lag Optimize?      |     | Yes   | Yes   | Yes   |       |     |     |     |     |       |      |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   | 3.0   | 3.0   |     |     |     |     | 3.0   |      | 3.0   |
| Recall Mode             |     | C-Max | C-Max | None  | C-Max |     |     |     |     | None  |      | None  |
| Walk Time (s)           |     | 7.0   | 7.0   |       | 7.0   |     |     |     |     |       |      |       |
| Flash Dont Walk (s)     |     | 9.0   | 9.0   |       | 20.0  |     |     |     |     |       |      |       |
| Pedestrian Calls (#/hr) |     | 2     | 2     |       | 2     |     |     |     |     |       |      |       |
| Act Effct Green (s)     |     | 52.2  | 52.2  | 11.4  | 68.1  |     |     |     |     | 42.9  |      | 42.9  |
| Actuated g/C Ratio      |     | 0.44  | 0.44  | 0.10  | 0.57  |     |     |     |     | 0.36  |      | 0.36  |
| v/c Ratio               |     | 0.93  | 0.45  | 0.94  | 0.84  |     |     |     |     | 0.93  |      | 0.75  |
| Control Delay           |     | 38.6  | 11.6  | 79.0  | 20.2  |     |     |     |     | 52.0  |      | 36.5  |
| Queue Delay             |     | 33.0  | 0.2   | 0.0   | 5.5   |     |     |     |     | 0.0   |      | 0.0   |
| Total Delay             |     | 71.7  | 11.8  | 79.0  | 25.7  |     |     |     |     | 52.0  |      | 36.5  |
| LOS                     |     | E     | B     | E     | C     |     |     |     |     | D     |      | D     |
| Approach Delay          |     | 56.7  |       |       | 31.6  |     |     |     |     |       | 45.8 |       |
| Approach LOS            |     | E     |       |       | C     |     |     |     |     |       | D    |       |
| Queue Length 50th (ft)  |     | 408   | 78    | 113   | 323   |     |     |     |     | 410   |      | 257   |
| Queue Length 95th (ft)  |     | m402  | m74   | m#163 | m384  |     |     |     |     | #542  |      | 339   |
| Internal Link Dist (ft) |     | 373   |       |       | 518   |     |     | 744 |     |       | 1280 |       |
| Turn Bay Length (ft)    |     |       |       | 70    |       |     |     |     |     |       |      |       |
| Base Capacity (vph)     |     | 2095  | 1445  | 308   | 2734  |     |     |     |     | 1178  |      | 992   |
| Starvation Cap Reductn  |     | 197   | 194   | 0     | 110   |     |     |     |     | 0     |      | 0     |
| Spillback Cap Reductn   |     | 272   | 0     | 0     | 399   |     |     |     |     | 0     |      | 4     |
| Storage Cap Reductn     |     | 0     | 0     | 0     | 0     |     |     |     |     | 0     |      | 0     |
| Reduced v/c Ratio       |     | 1.07  | 0.52  | 0.94  | 0.98  |     |     |     |     | 0.92  |      | 0.74  |

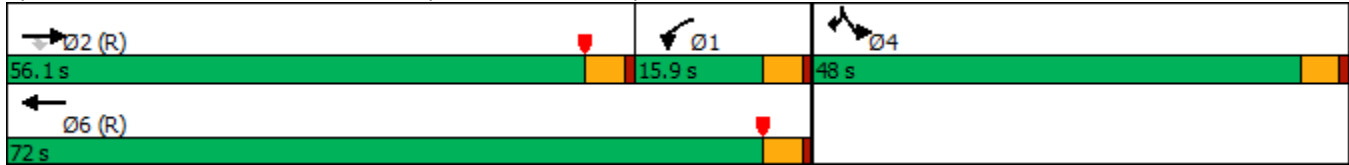
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.94  
 Intersection Signal Delay: 44.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 92.0%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

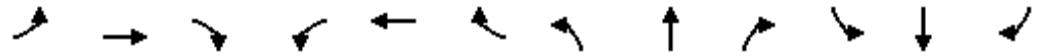
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road



Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT  | NBR   | SBL  | SBT  | SBR   |
|----------------------------|------|-------|-------|------|-------|-------|-------|------|-------|------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑     |      | ↑↑↑   | ↑     | ↑↑    |      | ↑     |      |      |       |
| Traffic Volume (vph)       | 0    | 2605  | 424   | 0    | 1472  | 573   | 1104  | 0    | 534   | 0    | 0    | 0     |
| Future Volume (vph)        | 0    | 2605  | 424   | 0    | 1472  | 573   | 1104  | 0    | 534   | 0    | 0    | 0     |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800 | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 100   | 0    |       | 0     | 215   |      | 0     | 0    |      | 0     |
| Storage Lanes              | 0    |       | 1     | 0    |       | 1     | 1     |      | 1     | 0    |      | 0     |
| Taper Length (ft)          | 90   |       |       | 90   |       |       | 90    |      |       | 90   |      |       |
| Lane Util. Factor          | 1.00 | 0.86  | 0.86  | 1.00 | 0.91  | 1.00  | 0.97  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Frt                        |      | 0.998 | 0.850 |      |       | 0.850 |       |      | 0.850 |      |      |       |
| Flt Protected              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (prot)          | 0    | 4544  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Flt Permitted              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (perm)          | 0    | 4544  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Right Turn on Red          |      |       | Yes   |      |       | Yes   |       |      | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |      | 3     | 138   |      |       | 351   |       |      | 14    |      |      |       |
| Link Speed (mph)           |      | 45    |       |      | 45    |       |       | 30   |       |      | 30   |       |
| Link Distance (ft)         |      | 598   |       |      | 654   |       |       | 831  |       |      | 1116 |       |
| Travel Time (s)            |      | 9.1   |       |      | 9.9   |       |       | 18.9 |       |      | 25.4 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 2605  | 424   | 0    | 1472  | 573   | 1104  | 0    | 534   | 0    | 0    | 0     |
| Shared Lane Traffic (%)    |      |       | 10%   |      |       |       |       |      |       |      |      |       |
| Lane Group Flow (vph)      | 0    | 2647  | 382   | 0    | 1472  | 573   | 1104  | 0    | 534   | 0    | 0    | 0     |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No   | No    | No   | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left | Right | Left | Left | Right |
| Median Width(ft)           |      | 24    |       |      | 24    |       |       | 24   |       |      | 24   |       |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0    |       |      | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16   |       |      | 16   |       |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |      |       |      |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |      | 9     | 15   |      | 9     |
| Number of Detectors        |      | 2     | 1     |      | 2     | 1     | 1     |      | 1     |      |      |       |
| Detector Template          |      | Thru  | Right |      | Thru  | Right | Left  |      | Right |      |      |       |
| Leading Detector (ft)      |      | 100   | 20    |      | 100   | 20    | 20    |      | 20    |      |      |       |
| Trailing Detector (ft)     |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Position(ft)    |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Size(ft)        |      | 6     | 20    |      | 6     | 20    | 20    |      | 20    |      |      |       |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |      | Cl+Ex | Cl+Ex | Cl+Ex |      | Cl+Ex |      |      |       |
| Detector 1 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 2 Position(ft)    |      | 94    |       |      | 94    |       |       |      |       |      |      |       |
| Detector 2 Size(ft)        |      | 6     |       |      | 6     |       |       |      |       |      |      |       |
| Detector 2 Type            |      | Cl+Ex |       |      | Cl+Ex |       |       |      |       |      |      |       |
| Detector 2 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |      | 0.0   |       |       |      |       |      |      |       |
| Turn Type                  |      | NA    | Perm  |      | NA    | Free  | Prot  |      | Perm  |      |      |       |
| Protected Phases           |      | 2     |       |      | 6     |       | 3     |      |       |      |      |       |
| Permitted Phases           |      |       | 2     |      |       | Free  |       |      | 3     |      |      |       |

Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group              | EBL | EBT   | EBR   | WBL | WBT   | WBR   | NBL   | NBT  | NBR   | SBL | SBT  | SBR |
|-------------------------|-----|-------|-------|-----|-------|-------|-------|------|-------|-----|------|-----|
| Detector Phase          |     | 2     | 2     |     | 6     |       | 3     |      | 3     |     |      |     |
| Switch Phase            |     |       |       |     |       |       |       |      |       |     |      |     |
| Minimum Initial (s)     |     | 5.0   | 5.0   |     | 5.0   |       | 5.0   |      | 5.0   |     |      |     |
| Minimum Split (s)       |     | 36.5  | 36.5  |     | 20.5  |       | 23.5  |      | 23.5  |     |      |     |
| Total Split (s)         |     | 74.0  | 74.0  |     | 74.0  |       | 46.0  |      | 46.0  |     |      |     |
| Total Split (%)         |     | 61.7% | 61.7% |     | 61.7% |       | 38.3% |      | 38.3% |     |      |     |
| Maximum Green (s)       |     | 69.5  | 69.5  |     | 69.5  |       | 41.5  |      | 41.5  |     |      |     |
| Yellow Time (s)         |     | 3.5   | 3.5   |     | 3.5   |       | 3.5   |      | 3.5   |     |      |     |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   |       | 1.0   |      | 1.0   |     |      |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   |       | 0.0   |      | 0.0   |     |      |     |
| Total Lost Time (s)     |     | 4.5   | 4.5   |     | 4.5   |       | 4.5   |      | 4.5   |     |      |     |
| Lead/Lag                |     |       |       |     |       |       |       |      |       |     |      |     |
| Lead-Lag Optimize?      |     |       |       |     |       |       |       |      |       |     |      |     |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   |       | 3.0   |      | 3.0   |     |      |     |
| Recall Mode             |     | C-Max | C-Max |     | C-Max |       | None  |      | None  |     |      |     |
| Walk Time (s)           |     | 7.0   | 7.0   |     |       |       |       |      |       |     |      |     |
| Flash Dont Walk (s)     |     | 25.0  | 25.0  |     |       |       |       |      |       |     |      |     |
| Pedestrian Calls (#/hr) |     | 2     | 2     |     |       |       |       |      |       |     |      |     |
| Act Effct Green (s)     |     | 69.5  | 69.5  |     | 69.5  | 120.0 | 41.5  |      | 41.5  |     |      |     |
| Actuated g/C Ratio      |     | 0.58  | 0.58  |     | 0.58  | 1.00  | 0.35  |      | 0.35  |     |      |     |
| v/c Ratio               |     | 1.01  | 0.47  |     | 0.53  | 0.38  | 0.98  |      | 1.01  |     |      |     |
| Control Delay           |     | 24.3  | 4.3   |     | 0.9   | 1.2   | 62.1  |      | 81.1  |     |      |     |
| Queue Delay             |     | 36.4  | 0.0   |     | 0.0   | 0.0   | 0.0   |      | 0.0   |     |      |     |
| Total Delay             |     | 60.7  | 4.3   |     | 1.0   | 1.2   | 62.1  |      | 81.1  |     |      |     |
| LOS                     |     | E     | A     |     | A     | A     | E     |      | F     |     |      |     |
| Approach Delay          |     | 53.6  |       |     | 1.0   |       |       | 68.3 |       |     |      |     |
| Approach LOS            |     | D     |       |     | A     |       |       | E    |       |     |      |     |
| Queue Length 50th (ft)  |     | ~523  | 67    |     | 12    | 0     | 434   |      | ~414  |     |      |     |
| Queue Length 95th (ft)  |     | #914  | m66   |     | m15   | m0    | #581  |      | #648  |     |      |     |
| Internal Link Dist (ft) |     | 518   |       |     | 574   |       |       | 751  |       |     | 1036 |     |
| Turn Bay Length (ft)    |     |       | 100   |     |       |       | 215   |      |       |     |      |     |
| Base Capacity (vph)     |     | 2632  | 805   |     | 2790  | 1500  | 1124  |      | 527   |     |      |     |
| Starvation Cap Reductn  |     | 69    | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Spillback Cap Reductn   |     | 250   | 0     |     | 68    | 0     | 0     |      | 0     |     |      |     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Reduced v/c Ratio       |     | 1.11  | 0.47  |     | 0.54  | 0.38  | 0.98  |      | 1.01  |     |      |     |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 9 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 110  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 41.2  
 Intersection LOS: D  
 Intersection Capacity Utilization 98.8%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

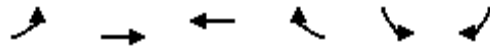
Splits and Phases: 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road





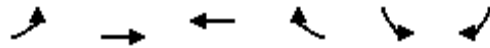
Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SBL   | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑↑   |       | ↓↓↓   | ↓     |
| Traffic Volume (vph)       | 0    | 1742  | 2232  | 0     | 684   | 572   |
| Future Volume (vph)        | 0    | 1742  | 2232  | 0     | 684   | 572   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 0    |       |       | 0     | 0     | 260   |
| Storage Lanes              | 0    |       |       | 0     | 2     | 1     |
| Taper Length (ft)          | 90   |       |       |       | 90    |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.91  | 1.00  | 0.97  | 0.91  |
| Frt                        |      |       |       |       | 0.969 | 0.850 |
| Flt Protected              |      |       |       |       | 0.962 |       |
| Satd. Flow (prot)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Flt Permitted              |      |       |       |       | 0.962 |       |
| Satd. Flow (perm)          | 0    | 4818  | 4818  | 0     | 3191  | 1365  |
| Right Turn on Red          |      |       |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |      |       |       |       | 2     | 2     |
| Link Speed (mph)           |      | 45    | 45    |       | 30    |       |
| Link Distance (ft)         |      | 293   | 273   |       | 775   |       |
| Travel Time (s)            |      | 4.4   | 4.1   |       | 17.6  |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 0    | 1742  | 2232  | 0     | 684   | 572   |
| Shared Lane Traffic (%)    |      |       |       |       |       | 31%   |
| Lane Group Flow (vph)      | 0    | 1742  | 2232  | 0     | 861   | 395   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |
| Median Width(ft)           |      | 0     | 0     |       | 24    |       |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    | 16    |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |
| Number of Detectors        |      | 2     | 2     |       | 1     | 1     |
| Detector Template          |      | Thru  | Thru  |       | Left  | Right |
| Leading Detector (ft)      |      | 100   | 100   |       | 20    | 20    |
| Trailing Detector (ft)     |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        |      | 6     | 6     |       | 20    | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |      | 94    | 94    |       |       |       |
| Detector 2 Size(ft)        |      | 6     | 6     |       |       |       |
| Detector 2 Type            |      | Cl+Ex | Cl+Ex |       |       |       |
| Detector 2 Channel         |      |       |       |       |       |       |
| Detector 2 Extend (s)      |      | 0.0   | 0.0   |       |       |       |
| Turn Type                  |      | NA    | NA    |       | Prot  | Prot  |
| Protected Phases           |      | 4     | 8     |       | 6     | 6     |
| Permitted Phases           |      |       |       |       |       |       |

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp



| Lane Group              | EBL | EBT   | WBT   | WBR | SBL   | SBR   |
|-------------------------|-----|-------|-------|-----|-------|-------|
| Detector Phase          |     | 4     | 8     |     | 6     | 6     |
| Switch Phase            |     |       |       |     |       |       |
| Minimum Initial (s)     |     | 6.0   | 6.0   |     | 6.0   | 6.0   |
| Minimum Split (s)       |     | 11.0  | 25.0  |     | 11.0  | 11.0  |
| Total Split (s)         |     | 30.0  | 30.0  |     | 20.0  | 20.0  |
| Total Split (%)         |     | 60.0% | 60.0% |     | 40.0% | 40.0% |
| Maximum Green (s)       |     | 25.0  | 25.0  |     | 15.0  | 15.0  |
| Yellow Time (s)         |     | 4.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     |     | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Lead/Lag                |     |       |       |     |       |       |
| Lead-Lag Optimize?      |     |       |       |     |       |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             |     | C-Max | C-Max |     | Max   | Max   |
| Walk Time (s)           |     |       | 7.0   |     |       |       |
| Flash Dont Walk (s)     |     |       | 13.0  |     |       |       |
| Pedestrian Calls (#/hr) |     |       | 2     |     |       |       |
| Act Effct Green (s)     |     | 25.0  | 25.0  |     | 15.0  | 15.0  |
| Actuated g/C Ratio      |     | 0.50  | 0.50  |     | 0.30  | 0.30  |
| v/c Ratio               |     | 0.72  | 0.93  |     | 0.90  | 0.96  |
| Control Delay           |     | 12.0  | 12.3  |     | 32.2  | 58.8  |
| Queue Delay             |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             |     | 12.0  | 12.3  |     | 32.2  | 58.8  |
| LOS                     |     | B     | B     |     | C     | E     |
| Approach Delay          |     | 12.0  | 12.3  |     | 40.6  |       |
| Approach LOS            |     | B     | B     |     | D     |       |
| Queue Length 50th (ft)  |     | 131   | 204   |     | 122   | 121   |
| Queue Length 95th (ft)  |     | 179   | m302  |     | #221  | #285  |
| Internal Link Dist (ft) |     | 213   | 193   |     | 695   |       |
| Turn Bay Length (ft)    |     |       |       |     |       | 260   |
| Base Capacity (vph)     |     | 2409  | 2409  |     | 958   | 410   |
| Starvation Cap Reductn  |     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   |     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       |     | 0.72  | 0.93  |     | 0.90  | 0.96  |

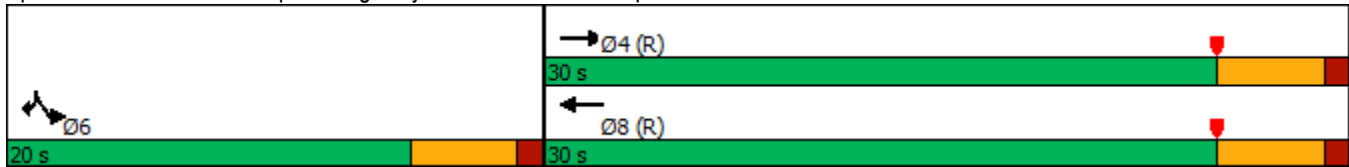
Intersection Summary

Area Type: Other  
 Cycle Length: 50  
 Actuated Cycle Length: 50  
 Offset: 43 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 65  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.96  
 Intersection Signal Delay: 19.0  
 Intersection LOS: B  
 Intersection Capacity Utilization 125.1%  
 ICU Level of Service H  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

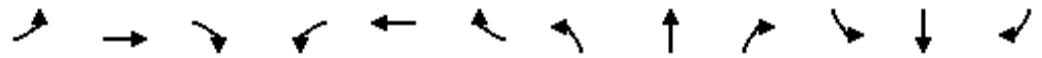
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Imperial Highway & SR-57 SB Off-Ramp



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT   | NBR   | SBL  | SBT  | SBR   |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|-------|
| Lane Configurations        | ↘     | ↑↑↑   |       |      | ↑↑↑   |       | ↘↘    | ↔     | ↗     |      |      | ↗↗    |
| Traffic Volume (vph)       | 118   | 1555  | 0     | 0    | 1756  | 18    | 1153  | 43    | 949   | 0    | 0    | 51    |
| Future Volume (vph)        | 118   | 1555  | 0     | 0    | 1756  | 18    | 1153  | 43    | 949   | 0    | 0    | 51    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 260   |       | 0     | 0    |       | 0     | 610   |       | 350   | 0    |      | 0     |
| Storage Lanes              | 1     |       | 0     | 0    |       | 0     | 1     |       | 1     | 0    |      | 2     |
| Taper Length (ft)          | 90    |       |       | 90   |       |       | 90    |       |       | 90   |      |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00 | 0.86  | 0.86  | 0.91  | 0.86  | 0.95  | 1.00 | 1.00 | 0.88  |
| Frt                        |       |       |       |      | 0.998 |       |       | 0.892 | 0.850 |      |      | 0.850 |
| Flt Protected              | 0.950 |       |       |      |       |       | 0.950 | 0.990 |       |      |      |       |
| Satd. Flow (prot)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1340  | 1425  | 0    | 0    | 2640  |
| Flt Permitted              | 0.950 |       |       |      |       |       | 0.950 | 0.990 |       |      |      |       |
| Satd. Flow (perm)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1340  | 1425  | 0    | 0    | 2640  |
| Right Turn on Red          |       |       | Yes   |      |       | Yes   |       |       | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |       |       |       |      | 2     |       |       | 141   | 147   |      |      | 213   |
| Link Speed (mph)           |       | 45    |       |      | 45    |       |       | 30    |       |      |      | 30    |
| Link Distance (ft)         |       | 271   |       |      | 540   |       |       | 932   |       |      |      | 494   |
| Travel Time (s)            |       | 4.1   |       |      | 8.2   |       |       | 21.2  |       |      |      | 11.2  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 118   | 1555  | 0     | 0    | 1756  | 18    | 1153  | 43    | 949   | 0    | 0    | 51    |
| Shared Lane Traffic (%)    |       |       |       |      |       |       | 10%   |       | 43%   |      |      |       |
| Lane Group Flow (vph)      | 118   | 1555  | 0     | 0    | 1774  | 0     | 1038  | 566   | 541   | 0    | 0    | 51    |
| Enter Blocked Intersection | No    | No    | No    | No   | No    | No    | No    | No    | No    | No   | No   | No    |
| Lane Alignment             | Left  | Left  | Right | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right |
| Median Width(ft)           |       | 12    |       |      | 12    |       |       | 24    |       |      |      | 24    |
| Link Offset(ft)            |       | 0     |       |      | 0     |       |       | 0     |       |      |      | 0     |
| Crosswalk Width(ft)        |       | 16    |       |      | 16    |       |       | 16    |       |      |      | 16    |
| Two way Left Turn Lane     |       |       |       |      |       |       |       |       |       |      |      |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     |
| Number of Detectors        | 1     | 2     |       |      | 2     |       | 1     | 2     | 1     |      |      | 1     |
| Detector Template          | Left  | Thru  |       |      | Thru  |       | Left  | Thru  | Right |      |      | Right |
| Leading Detector (ft)      | 20    | 100   |       |      | 100   |       | 20    | 100   | 20    |      |      | 20    |
| Trailing Detector (ft)     | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       |      | 6     |       | 20    | 6     | 20    |      |      | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       |      | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |      |      | Cl+Ex |
| Detector 1 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |      | 94    |       |       | 94    |       |      |      |       |
| Detector 2 Size(ft)        |       | 6     |       |      | 6     |       |       | 6     |       |      |      |       |
| Detector 2 Type            |       | Cl+Ex |       |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |
| Detector 2 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 2 Extend (s)      |       | 0.0   |       |      | 0.0   |       |       | 0.0   |       |      |      |       |
| Turn Type                  | Prot  | NA    |       |      | NA    |       | Split | NA    | Prot  |      |      | Prot  |
| Protected Phases           | 7     | 4     |       |      | 8     |       | 2     | 2     | 2     |      |      | 1     |
| Permitted Phases           |       |       |       |      |       |       |       |       |       |      |      |       |

Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL | WBT   | WBR | NBL   | NBT   | NBR   | SBL | SBT | SBR   |
|-------------------------|-------|-------|-----|-----|-------|-----|-------|-------|-------|-----|-----|-------|
| Detector Phase          | 7     | 4     |     |     | 8     |     | 2     | 2     | 2     |     |     | 1     |
| Switch Phase            |       |       |     |     |       |     |       |       |       |     |     |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     |     | 6.0   |     | 6.0   | 6.0   | 6.0   |     |     | 6.0   |
| Minimum Split (s)       | 10.0  | 32.0  |     |     | 28.0  |     | 11.0  | 11.0  | 11.0  |     |     | 11.0  |
| Total Split (s)         | 12.0  | 50.0  |     |     | 38.0  |     | 39.0  | 39.0  | 39.0  |     |     | 11.0  |
| Total Split (%)         | 12.0% | 50.0% |     |     | 38.0% |     | 39.0% | 39.0% | 39.0% |     |     | 11.0% |
| Maximum Green (s)       | 8.0   | 45.0  |     |     | 33.0  |     | 34.0  | 34.0  | 34.0  |     |     | 6.0   |
| Yellow Time (s)         | 3.0   | 4.0   |     |     | 4.0   |     | 4.0   | 4.0   | 4.0   |     |     | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     |     | 1.0   |     | 1.0   | 1.0   | 1.0   |     |     | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     |     | 5.0   |     | 5.0   | 5.0   | 5.0   |     |     | 5.0   |
| Lead/Lag                | Lead  |       |     |     | Lag   |     | Lead  | Lead  | Lead  |     |     | Lag   |
| Lead-Lag Optimize?      | Yes   |       |     |     | Yes   |     | Yes   | Yes   | Yes   |     |     | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     |     | 3.0   |     | 3.0   | 3.0   | 3.0   |     |     | 3.0   |
| Recall Mode             | None  | C-Max |     |     | C-Max |     | Max   | Max   | Max   |     |     | None  |
| Walk Time (s)           |       | 7.0   |     |     | 7.0   |     |       |       |       |     |     |       |
| Flash Dont Walk (s)     |       | 20.0  |     |     | 16.0  |     |       |       |       |     |     |       |
| Pedestrian Calls (#/hr) |       | 2     |     |     | 2     |     |       |       |       |     |     |       |
| Act Effct Green (s)     | 8.3   | 47.2  |     |     | 34.9  |     | 34.0  | 34.0  | 34.0  |     |     | 6.0   |
| Actuated g/C Ratio      | 0.08  | 0.47  |     |     | 0.35  |     | 0.34  | 0.34  | 0.34  |     |     | 0.06  |
| v/c Ratio               | 0.85  | 0.68  |     |     | 0.84  |     | 1.00  | 1.03  | 0.93  |     |     | 0.14  |
| Control Delay           | 82.3  | 23.2  |     |     | 35.0  |     | 62.1  | 73.3  | 48.2  |     |     | 0.8   |
| Queue Delay             | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0   |
| Total Delay             | 82.3  | 23.2  |     |     | 35.0  |     | 62.1  | 73.3  | 48.2  |     |     | 0.8   |
| LOS                     | F     | C     |     |     | C     |     | E     | E     | D     |     |     | A     |
| Approach Delay          |       | 27.4  |     |     | 35.0  |     |       | 61.6  |       |     |     | 0.8   |
| Approach LOS            |       | C     |     |     | C     |     |       | E     |       |     |     | A     |
| Queue Length 50th (ft)  | 77    | 328   |     |     | 308   |     | ~360  | ~377  | 268   |     |     | 0     |
| Queue Length 95th (ft)  | m#116 | m386  |     |     | 359   |     | #514  | #623  | #498  |     |     | 0     |
| Internal Link Dist (ft) |       | 191   |     |     | 460   |     |       | 852   |       |     |     | 414   |
| Turn Bay Length (ft)    | 260   |       |     |     |       |     | 610   |       | 350   |     |     |       |
| Base Capacity (vph)     | 139   | 2274  |     |     | 2115  |     | 1037  | 548   | 581   |     |     | 358   |
| Starvation Cap Reductn  | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Storage Cap Reductn     | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0     |
| Reduced v/c Ratio       | 0.85  | 0.68  |     |     | 0.84  |     | 1.00  | 1.03  | 0.93  |     |     | 0.14  |

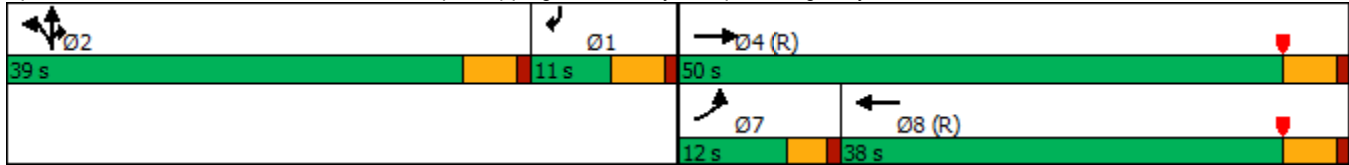
Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 100  
 Offset: 80 (80%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.03  
 Intersection Signal Delay: 42.5  
 Intersection Capacity Utilization 81.4%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service D

~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway



Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

AM Year 2045 Plus Project  
AM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 238   | 2195  | 117   | 104   | 1821  | 112   | 172   | 241   | 94    | 190   | 382   | 186   |
| Future Volume (vph)        | 238   | 2195  | 117   | 104   | 1821  | 112   | 172   | 241   | 94    | 190   | 382   | 186   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 340   |       | 0     | 200   |       | 0     | 170   |       | 0     | 210   |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 1.00  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 1.00  | 1.00  |
| Frt                        |       | 0.992 |       |       | 0.991 |       |       | 0.958 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4779  | 0     | 1676  | 4774  | 0     | 3252  | 3212  | 0     | 3252  | 1765  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4779  | 0     | 1676  | 4774  | 0     | 3252  | 3212  | 0     | 3252  | 1765  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 9     |       |       | 9     |       |       | 49    |       |       |       | 186   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 540   |       |       | 1433  |       |       | 1004  |       |       |       | 3109  |
| Travel Time (s)            |       | 12.3  |       |       | 32.6  |       |       | 22.8  |       |       |       | 70.7  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 238   | 2195  | 117   | 104   | 1821  | 112   | 172   | 241   | 94    | 190   | 382   | 186   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 238   | 2312  | 0     | 104   | 1933  | 0     | 172   | 335   | 0     | 190   | 382   | 186   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 12    |       |       | 12    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

AM Year 2045 Plus Project  
AM Year 2045 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL  | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1    | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |      |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 37.0  |     | 10.0  | 40.0  |     | 10.0 | 41.0  | 41.0  |
| Total Split (s)         | 20.0  | 58.0  |     | 11.0  | 49.0  |     | 10.0  | 40.0  |     | 11.0 | 41.0  | 41.0  |
| Total Split (%)         | 16.7% | 48.3% |     | 9.2%  | 40.8% |     | 8.3%  | 33.3% |     | 9.2% | 34.2% | 34.2% |
| Maximum Green (s)       | 16.0  | 53.0  |     | 7.0   | 44.0  |     | 6.0   | 35.0  |     | 7.0  | 36.0  | 36.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag  | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes  | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |      | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 25.0  |     |       | 28.0  |     |      | 29.0  | 29.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |      | 2     | 2     |
| Act Effct Green (s)     | 16.0  | 53.0  |     | 7.0   | 44.0  |     | 6.0   | 35.0  |     | 7.0  | 36.0  | 36.0  |
| Actuated g/C Ratio      | 0.13  | 0.44  |     | 0.06  | 0.37  |     | 0.05  | 0.29  |     | 0.06 | 0.30  | 0.30  |
| v/c Ratio               | 1.07  | 1.09  |     | 1.07  | 1.10  |     | 1.06  | 0.35  |     | 1.01 | 0.72  | 0.32  |
| Control Delay           | 128.7 | 82.9  |     | 153.9 | 78.6  |     | 142.0 | 29.5  |     | 71.8 | 23.5  | 9.7   |
| Queue Delay             | 0.0   | 3.2   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   |
| Total Delay             | 128.7 | 86.1  |     | 153.9 | 78.6  |     | 142.0 | 29.5  |     | 71.8 | 23.5  | 9.7   |
| LOS                     | F     | F     |     | F     | E     |     | F     | C     |     | E    | C     | A     |
| Approach Delay          |       | 90.1  |     |       | 82.5  |     |       | 67.7  |     |      | 32.2  |       |
| Approach LOS            |       | F     |     |       | F     |     |       | E     |     |      | C     |       |
| Queue Length 50th (ft)  | ~204  | ~741  |     | ~88   | ~629  |     | ~75   | 91    |     | ~81  | 254   | 62    |
| Queue Length 95th (ft)  | #366  | #836  |     | m#193 | #722  |     | #149  | 133   |     | m71  | m212  | m45   |
| Internal Link Dist (ft) |       | 460   |     |       | 1353  |     |       | 924   |     |      | 3029  |       |
| Turn Bay Length (ft)    | 340   |       |     | 200   |       |     | 170   |       |     | 210  |       |       |
| Base Capacity (vph)     | 223   | 2115  |     | 97    | 1756  |     | 162   | 971   |     | 189  | 529   | 580   |
| Starvation Cap Reductn  | 0     | 240   |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0    | 0     | 0     |
| Reduced v/c Ratio       | 1.07  | 1.23  |     | 1.07  | 1.10  |     | 1.06  | 0.35  |     | 1.01 | 0.72  | 0.32  |

Intersection Summary

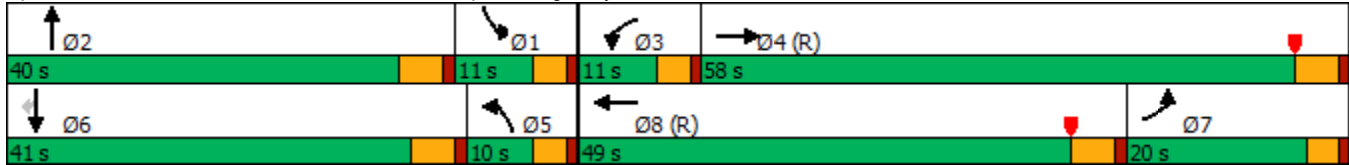
|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 3 (3%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.10   |
| Intersection Signal Delay:         | 78.0   |
| Intersection LOS:                  | E  |
| Intersection Capacity Utilization: | 95.1%  |
| ICU Level of Service:              | F  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.



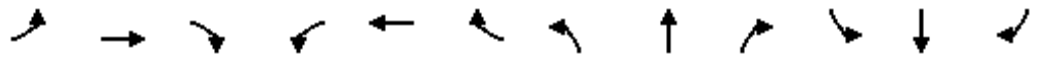
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Associated Road & Imperial Highway



Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 14    | 2170  | 488   | 201   | 1757  | 37    | 203   | 14    | 167   | 28    | 33    | 16    |
| Future Volume (vph)        | 14    | 2170  | 488   | 201   | 1757  | 37    | 203   | 14    | 167   | 28    | 33    | 16    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 140   |       | 200   | 225   |       | 0     | 195   |       | 0     | 85    |       | 0     |
| Storage Lanes              | 1     |       | 1     | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00  | 0.91  | 0.91  | 0.95  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       |       | 0.850 |       | 0.997 |       |       |       | 0.850 |       | 0.951 |       |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.958 |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4818  | 1500  | 1676  | 4803  | 0     | 1593  | 1606  | 1500  | 1676  | 1678  | 0     |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.958 |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4818  | 1500  | 1676  | 4803  | 0     | 1593  | 1606  | 1500  | 1676  | 1678  | 0     |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 316   |       | 4     |       |       |       | 167   |       | 15    |       |
| Link Speed (mph)           |       | 30    |       | 30    |       |       | 30    |       | 30    |       | 30    |       |
| Link Distance (ft)         |       | 1433  |       | 3487  |       |       | 2609  |       | 962   |       |       |       |
| Travel Time (s)            |       | 32.6  |       | 79.3  |       |       | 59.3  |       | 21.9  |       |       |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 14    | 2170  | 488   | 201   | 1757  | 37    | 203   | 14    | 167   | 28    | 33    | 16    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       | 47%   |       |       |       |       |       |
| Lane Group Flow (vph)      | 14    | 2170  | 488   | 201   | 1794  | 0     | 108   | 109   | 167   | 28    | 49    | 0     |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       | 24    |       |       | 12    |       | 12    |       | 12    |       |
| Link Offset(ft)            |       | 0     |       | 0     |       |       | 0     |       | 0     |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       | 16    |       |       | 16    |       | 16    |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 2 Position(ft)    |       | 94    |       | 94    |       |       | 94    |       | 94    |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       | 6     |       |       | 6     |       | 6     |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       | Cl+Ex |       |       | Cl+Ex |       | Cl+Ex |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       | 0.0   |       |       | 0.0   |       | 0.0   |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    |       | Split | NA    | Perm  | Split | NA    |       |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       |       |       |       | 2     |       |       |       |

Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group              | EBL  | EBT   | EBR   | WBL   | WBT   | WBR | NBL   | NBT   | NBR   | SBL  | SBT  | SBR |
|-------------------------|------|-------|-------|-------|-------|-----|-------|-------|-------|------|------|-----|
| Detector Phase          | 7    | 4     | 4     | 3     | 8     |     | 2     | 2     | 2     | 6    | 6    |     |
| Switch Phase            |      |       |       |       |       |     |       |       |       |      |      |     |
| Minimum Initial (s)     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0  | 6.0  |     |
| Minimum Split (s)       | 10.0 | 33.0  | 33.0  | 10.0  | 26.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (s)         | 10.0 | 62.0  | 62.0  | 20.0  | 72.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (%)         | 8.3% | 51.7% | 51.7% | 16.7% | 60.0% |     | 22.5% | 22.5% | 22.5% | 9.2% | 9.2% |     |
| Maximum Green (s)       | 6.0  | 57.0  | 57.0  | 16.0  | 67.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Yellow Time (s)         | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   |     | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |     |
| All-Red Time (s)        | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0  | 1.0  |     |
| Lost Time Adjust (s)    | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Lost Time (s)     | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   |     | 5.0   | 5.0   | 5.0   | 5.0  | 5.0  |     |
| Lead/Lag                | Lead | Lead  | Lead  | Lag   | Lag   |     |       |       |       |      |      |     |
| Lead-Lag Optimize?      | Yes  | Yes   | Yes   | Yes   | Yes   |     |       |       |       |      |      |     |
| Vehicle Extension (s)   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |     |
| Recall Mode             | None | C-Max | C-Max | None  | C-Max |     | Max   | Max   | Max   | Max  | Max  |     |
| Walk Time (s)           |      | 7.0   | 7.0   |       | 7.0   |     | 7.0   | 7.0   | 7.0   |      |      |     |
| Flash Dont Walk (s)     |      | 21.0  | 21.0  |       | 14.0  |     | 15.0  | 15.0  | 15.0  |      |      |     |
| Pedestrian Calls (#/hr) |      | 2     | 2     |       | 2     |     | 2     | 2     | 2     |      |      |     |
| Act Effct Green (s)     | 6.0  | 57.0  | 57.0  | 16.0  | 73.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Actuated g/C Ratio      | 0.05 | 0.48  | 0.48  | 0.13  | 0.61  |     | 0.18  | 0.18  | 0.18  | 0.05 | 0.05 |     |
| v/c Ratio               | 0.17 | 0.95  | 0.56  | 0.90  | 0.61  |     | 0.37  | 0.37  | 0.41  | 0.34 | 0.50 |     |
| Control Delay           | 81.9 | 10.3  | 1.0   | 66.7  | 3.7   |     | 47.2  | 47.2  | 9.5   | 66.4 | 59.5 |     |
| Queue Delay             | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Delay             | 81.9 | 10.3  | 1.0   | 66.7  | 3.7   |     | 47.2  | 47.2  | 9.5   | 66.4 | 59.5 |     |
| LOS                     | F    | B     | A     | E     | A     |     | D     | D     | A     | E    | E    |     |
| Approach Delay          |      | 9.0   |       |       | 10.0  |     |       | 30.8  |       |      | 62.0 |     |
| Approach LOS            |      | A     |       |       | B     |     |       | C     |       |      | E    |     |
| Queue Length 50th (ft)  | 11   | 96    | 3     | 147   | 55    |     | 77    | 78    | 0     | 21   | 26   |     |
| Queue Length 95th (ft)  | m13  | m90   | m2    | m#274 | 78    |     | 137   | 138   | 60    | 53   | #72  |     |
| Internal Link Dist (ft) |      | 1353  |       |       | 3407  |     |       | 2529  |       |      | 882  |     |
| Turn Bay Length (ft)    | 140  |       | 200   | 225   |       |     | 195   |       |       | 85   |      |     |
| Base Capacity (vph)     | 83   | 2288  | 878   | 223   | 2923  |     | 292   | 294   | 411   | 83   | 98   |     |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Spillback Cap Reductn   | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Storage Cap Reductn     | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Reduced v/c Ratio       | 0.17 | 0.95  | 0.56  | 0.90  | 0.61  |     | 0.37  | 0.37  | 0.41  | 0.34 | 0.50 |     |

Intersection Summary

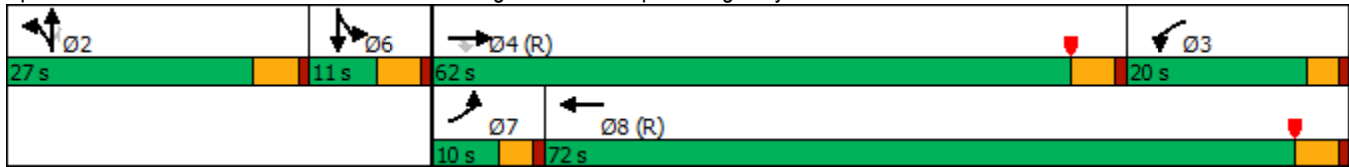
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 56 (47%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 105  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.95  
 Intersection Signal Delay: 11.8  
 Intersection LOS: B  
 Intersection Capacity Utilization 80.7%  
 ICU Level of Service D  
 Analysis Period (min) 15

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Placentia Avenue/Castlegate Lane & Imperial Highway



Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

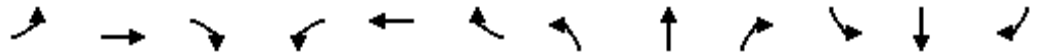
AM Year 2045 Plus Project  
AM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 155   | 1513  | 276   | 81    | 1274  | 101   | 202   | 283   | 99    | 413   | 757   | 149   |
| Future Volume (vph)        | 155   | 1513  | 276   | 81    | 1274  | 101   | 202   | 283   | 99    | 413   | 757   | 149   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 185   |       | 0     | 220   |       | 0     | 150   |       | 0     | 205   |       | 0     |
| Storage Lanes              | 2     |       | 0     | 2     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 0.91  | 0.97  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.977 |       |       | 0.989 |       |       | 0.961 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4707  | 0     | 3252  | 4765  | 0     | 3252  | 3222  | 0     | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4707  | 0     | 3252  | 4765  | 0     | 3252  | 3222  | 0     | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 39    |       |       | 13    |       |       | 37    |       |       |       | 149   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3487  |       |       | 3626  |       |       | 1318  |       |       |       | 1319  |
| Travel Time (s)            |       | 79.3  |       |       | 82.4  |       |       | 30.0  |       |       |       | 30.0  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 155   | 1513  | 276   | 81    | 1274  | 101   | 202   | 283   | 99    | 413   | 757   | 149   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 155   | 1789  | 0     | 81    | 1375  | 0     | 202   | 382   | 0     | 413   | 757   | 149   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

AM Year 2045 Plus Project  
AM Year 2045 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |      |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0 | 40.0  |     | 10.0  | 31.0  |     | 10.0  | 31.0  | 31.0  |
| Total Split (s)         | 14.0  | 57.0  |     | 10.0 | 53.0  |     | 14.0  | 31.0  |     | 22.0  | 39.0  | 39.0  |
| Total Split (%)         | 11.7% | 47.5% |     | 8.3% | 44.2% |     | 11.7% | 25.8% |     | 18.3% | 32.5% | 32.5% |
| Maximum Green (s)       | 10.0  | 52.0  |     | 6.0  | 48.0  |     | 10.0  | 26.0  |     | 18.0  | 34.0  | 34.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead | Lead  |     | Lag   | Lag   |     | Lead  | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |      | 28.0  |     |       | 19.0  |     |       | 19.0  | 19.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 10.0  | 54.0  |     | 6.0  | 48.0  |     | 10.0  | 26.4  |     | 17.6  | 34.0  | 34.0  |
| Actuated g/C Ratio      | 0.08  | 0.45  |     | 0.05 | 0.40  |     | 0.08  | 0.22  |     | 0.15  | 0.28  | 0.28  |
| v/c Ratio               | 0.57  | 0.84  |     | 0.50 | 0.72  |     | 0.75  | 0.52  |     | 0.87  | 0.80  | 0.28  |
| Control Delay           | 29.8  | 5.3   |     | 86.4 | 9.8   |     | 71.1  | 40.0  |     | 62.3  | 26.8  | 1.5   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 29.8  | 5.3   |     | 86.4 | 9.8   |     | 71.1  | 40.0  |     | 62.3  | 26.8  | 1.5   |
| LOS                     | C     | A     |     | F    | A     |     | E     | D     |     | E     | C     | A     |
| Approach Delay          |       | 7.2   |     |      | 14.0  |     |       | 50.8  |     |       | 35.1  |       |
| Approach LOS            |       | A     |     |      | B     |     |       | D     |     |       | D     |       |
| Queue Length 50th (ft)  | 56    | 42    |     | 31   | 64    |     | 80    | 125   |     | 129   | 169   | 1     |
| Queue Length 95th (ft)  | m60   | m95   |     | m34  | m61   |     | #134  | 176   |     | #234  | 273   | m11   |
| Internal Link Dist (ft) |       | 3407  |     |      | 3546  |     |       | 1238  |     |       | 1239  |       |
| Turn Bay Length (ft)    | 185   |       |     | 220  |       |     | 150   |       |     | 205   |       |       |
| Base Capacity (vph)     | 271   | 2139  |     | 162  | 1913  |     | 271   | 739   |     | 487   | 950   | 531   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.57  | 0.84  |     | 0.50 | 0.72  |     | 0.75  | 0.52  |     | 0.85  | 0.80  | 0.28  |

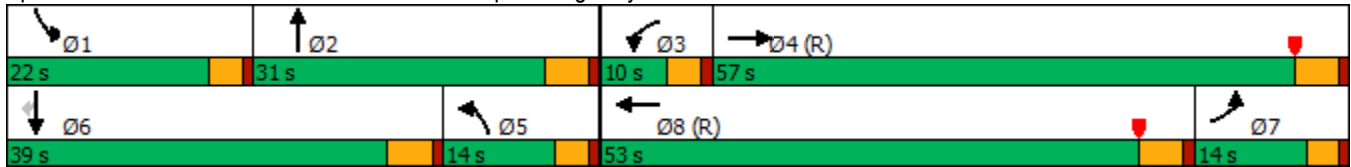
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 1 (1%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 95  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 20.8      Intersection LOS: C  
 Intersection Capacity Utilization 85.5%      ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

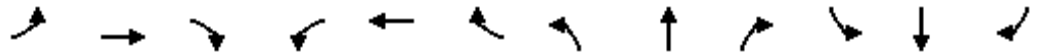
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Kraemer Boulevard & Imperial Highway



Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 212   | 1148  | 99    | 133   | 1785  | 169   | 151   | 216   | 135   | 318   | 338   | 233   |
| Future Volume (vph)        | 212   | 1148  | 99    | 133   | 1785  | 169   | 151   | 216   | 135   | 318   | 338   | 233   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Storage Lanes              | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 1.00  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 145   |       |       | 155   |       |       | 145   |       |       | 178   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 3626  |       |       | 3640  |       |       | 1142  |       |       | 3502  |       |
| Travel Time (s)            |       | 82.4  |       |       | 82.7  |       |       | 26.0  |       |       | 79.6  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 212   | 1148  | 99    | 133   | 1785  | 169   | 151   | 216   | 135   | 318   | 338   | 233   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 212   | 1148  | 99    | 133   | 1785  | 169   | 151   | 216   | 135   | 318   | 338   | 233   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       | 24    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       | 8     |       |       | 2     |       |       | 6     |



Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

AM Year 2045 Plus Project  
 AM Year 2045 Plus Project



| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     | 4     | 3     | 8     | 8     | 5     | 2     | 2     | 1     | 6     | 6     |
| Switch Phase            |       |       |       |       |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  | 38.0  | 10.0  | 40.0  | 40.0  | 10.0  | 47.0  | 47.0  | 10.0  | 49.0  | 49.0  |
| Total Split (s)         | 12.0  | 45.0  | 45.0  | 13.0  | 46.0  | 46.0  | 13.0  | 47.0  | 47.0  | 15.0  | 49.0  | 49.0  |
| Total Split (%)         | 10.0% | 37.5% | 37.5% | 10.8% | 38.3% | 38.3% | 10.8% | 39.2% | 39.2% | 12.5% | 40.8% | 40.8% |
| Maximum Green (s)       | 8.0   | 40.0  | 40.0  | 9.0   | 41.0  | 41.0  | 9.0   | 42.0  | 42.0  | 11.0  | 44.0  | 44.0  |
| Yellow Time (s)         | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max | C-Max | None  | C-Max | C-Max | None  | Max   | Max   | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   | 7.0   |       | 7.0   | 7.0   |       | 7.0   | 7.0   |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  | 26.0  |       | 28.0  | 28.0  |       | 35.0  | 35.0  |       | 37.0  | 37.0  |
| Pedestrian Calls (#/hr) |       | 2     | 2     |       | 2     | 2     |       | 2     | 2     |       | 2     | 2     |
| Act Effct Green (s)     | 8.0   | 40.0  | 40.0  | 9.0   | 41.0  | 41.0  | 8.8   | 42.0  | 42.0  | 11.0  | 44.2  | 44.2  |
| Actuated g/C Ratio      | 0.07  | 0.33  | 0.33  | 0.08  | 0.34  | 0.34  | 0.07  | 0.35  | 0.35  | 0.09  | 0.37  | 0.37  |
| v/c Ratio               | 0.98  | 0.71  | 0.17  | 0.55  | 1.08  | 0.28  | 0.64  | 0.18  | 0.22  | 1.07  | 0.27  | 0.35  |
| Control Delay           | 86.2  | 37.1  | 7.5   | 38.1  | 65.3  | 2.9   | 66.8  | 27.6  | 4.5   | 86.9  | 10.7  | 0.8   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 86.2  | 37.1  | 7.5   | 38.1  | 65.3  | 2.9   | 66.8  | 27.6  | 4.5   | 86.9  | 10.7  | 0.8   |
| LOS                     | F     | D     | A     | D     | E     | A     | E     | C     | A     | F     | B     | A     |
| Approach Delay          |       | 42.2  |       |       | 58.5  |       |       | 33.2  |       |       | 35.4  |       |
| Approach LOS            |       | D     |       |       | E     |       |       | C     |       |       | D     |       |
| Queue Length 50th (ft)  | 82    | 335   | 9     | 44    | ~545  | 10    | 59    | 60    | 0     | ~140  | 29    | 1     |
| Queue Length 95th (ft)  | m#121 | 383   | m20   | m50   | m#606 | m12   | 95    | 91    | 37    | m#163 | m33   | m0    |
| Internal Link Dist (ft) |       | 3546  |       |       | 3560  |       |       | 1062  |       |       | 3422  |       |
| Turn Bay Length (ft)    | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Base Capacity (vph)     | 216   | 1606  | 596   | 243   | 1646  | 614   | 243   | 1173  | 619   | 298   | 1236  | 665   |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.98  | 0.71  | 0.17  | 0.55  | 1.08  | 0.28  | 0.62  | 0.18  | 0.22  | 1.07  | 0.27  | 0.35  |

Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 21 (18%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.08   |
| Intersection Signal Delay:         | 47.0   |
| Intersection LOS:                  | D  |
| Intersection Capacity Utilization: | 73.7%  |
| ICU Level of Service:              | D  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

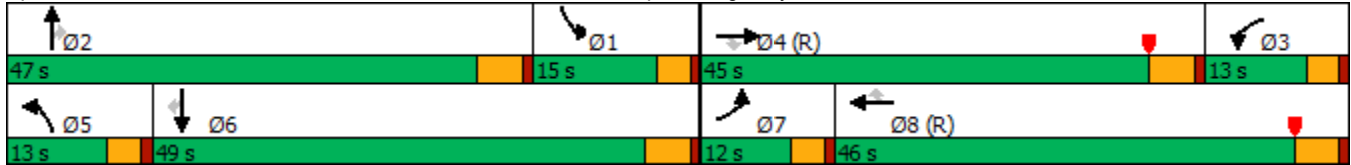
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Valencia Avenue/ Valencia Avenue & Imperial Highway



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

AM Year 2045 Plus Project  
AM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 46    | 1403  | 277   | 294   | 1644  | 619   | 280   | 250   | 160   | 968   | 615   | 38    |
| Future Volume (vph)        | 46    | 1403  | 277   | 294   | 1644  | 619   | 280   | 250   | 160   | 968   | 615   | 38    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.975 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4697  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4697  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 37    |       |       |       | 546   |       |       | 139   |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       |       | 1486  |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       |       | 33.8  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 46    | 1403  | 277   | 294   | 1644  | 619   | 280   | 250   | 160   | 968   | 615   | 38    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 46    | 1680  | 0     | 294   | 1644  | 619   | 280   | 250   | 160   | 968   | 615   | 38    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

AM Year 2045 Plus Project  
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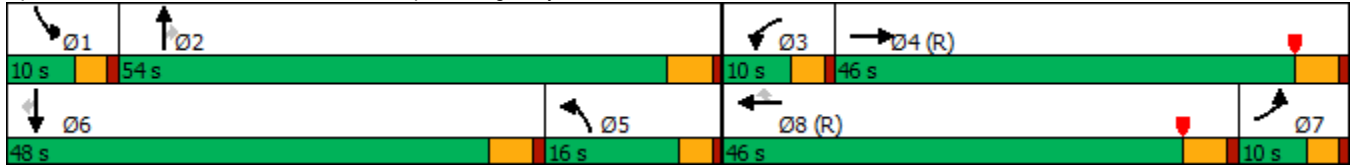
| Lane Group              | EBL  | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL    | SBT    | SBR   |
|-------------------------|------|-------|-----|-------|-------|-------|-------|-------|-------|--------|--------|-------|
| Detector Phase          | 7    | 4     |     | 3     | 8     | 8     | 5     | 2     | 2     | 1      | 6      | 6     |
| Switch Phase            |      |       |     |       |       |       |       |       |       |        |        |       |
| Minimum Initial (s)     | 6.0  | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0    | 6.0    | 6.0   |
| Minimum Split (s)       | 10.0 | 46.0  |     | 10.0  | 38.0  | 38.0  | 10.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (s)         | 10.0 | 46.0  |     | 10.0  | 46.0  | 46.0  | 16.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (%)         | 8.3% | 38.3% |     | 8.3%  | 38.3% | 38.3% | 13.3% | 45.0% | 45.0% | 8.3%   | 40.0%  | 40.0% |
| Maximum Green (s)       | 6.0  | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Yellow Time (s)         | 3.0  | 4.0   |     | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0    | 4.0    | 4.0   |
| All-Red Time (s)        | 1.0  | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    | 1.0    | 1.0   |
| Lost Time Adjust (s)    | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Lost Time (s)     | 4.0  | 5.0   |     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0    | 5.0    | 5.0   |
| Lead/Lag                | Lag  | Lag   |     | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead   | Lead   | Lead  |
| Lead-Lag Optimize?      | Yes  | Yes   |     | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes    | Yes    | Yes   |
| Vehicle Extension (s)   | 3.0  | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0    | 3.0    | 3.0   |
| Recall Mode             | None | C-Max |     | None  | C-Max | C-Max | None  | Max   | Max   | None   | Max    | Max   |
| Walk Time (s)           |      | 7.0   |     |       | 7.0   | 7.0   |       | 7.0   | 7.0   |        | 7.0    | 7.0   |
| Flash Dont Walk (s)     |      | 34.0  |     |       | 26.0  | 26.0  |       | 42.0  | 42.0  |        | 36.0   | 36.0  |
| Pedestrian Calls (#/hr) |      | 2     |     |       | 2     | 2     |       | 2     | 2     |        | 2      | 2     |
| Act Effct Green (s)     | 6.0  | 41.0  |     | 6.0   | 43.0  | 43.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Actuated g/C Ratio      | 0.05 | 0.34  |     | 0.05  | 0.36  | 0.36  | 0.10  | 0.41  | 0.41  | 0.05   | 0.36   | 0.36  |
| v/c Ratio               | 0.55 | 1.03  |     | 1.81  | 0.95  | 0.70  | 0.86  | 0.18  | 0.23  | 5.98   | 0.51   | 0.06  |
| Control Delay           | 47.6 | 39.5  |     | 422.1 | 51.2  | 9.5   | 78.2  | 23.2  | 6.0   | 2250.1 | 35.6   | 0.0   |
| Queue Delay             | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Delay             | 47.6 | 39.5  |     | 422.1 | 51.2  | 9.5   | 78.2  | 23.2  | 6.0   | 2250.1 | 35.6   | 0.0   |
| LOS                     | D    | D     |     | F     | D     | A     | E     | C     | A     | F      | D      | A     |
| Approach Delay          |      | 39.8  |     |       | 83.8  |       |       | 41.5  |       |        | 1357.2 |       |
| Approach LOS            |      | D     |     |       | F     |       |       | D     |       |        | F      |       |
| Queue Length 50th (ft)  | 31   | ~147  |     | ~176  | 463   | 39    | 111   | 64    | 10    | ~756   | 195    | 0     |
| Queue Length 95th (ft)  | m46  | m#546 |     | #267  | #581  | 173   | #187  | 93    | 53    | m#680  | m178   | m0    |
| Internal Link Dist (ft) |      | 3560  |     |       | 1794  |       |       | 838   |       |        | 1406   |       |
| Turn Bay Length (ft)    | 220  |       |     | 230   |       | 270   | 135   |       | 100   | 185    |        | 50    |
| Base Capacity (vph)     | 83   | 1629  |     | 162   | 1726  | 887   | 325   | 1369  | 694   | 162    | 1201   | 630   |
| Starvation Cap Reductn  | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Spillback Cap Reductn   | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Storage Cap Reductn     | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Reduced v/c Ratio       | 0.55 | 1.03  |     | 1.81  | 0.95  | 0.70  | 0.86  | 0.18  | 0.23  | 5.98   | 0.51   | 0.06  |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 82 (68%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 5.98  
 Intersection Signal Delay: 380.9 Intersection LOS: F  
 Intersection Capacity Utilization 95.4% ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.

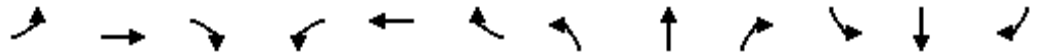
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Rose Drive & Imperial Highway



Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

PM Year 2045 Plus Project  
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| Lane Group                 | EBL  | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT  | NBR   | SBL   | SBT  | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|------|------|-------|-------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↗↗    | ↘↘    | ↑↑↑   |       |      |      |       | ↗↗    |      | ↗↗    |
| Traffic Volume (vph)       | 0    | 1516  | 877   | 270   | 1838  | 4     | 0    | 0    | 0     | 547   | 0    | 897   |
| Future Volume (vph)        | 0    | 1516  | 877   | 270   | 1838  | 4     | 0    | 0    | 0     | 547   | 0    | 897   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  | 1800  | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 0     | 70    |       | 0     | 0    |      | 0     | 0     |      | 0     |
| Storage Lanes              | 0    |       | 2     | 2     |       | 0     | 0    |      | 0     | 2     |      | 2     |
| Taper Length (ft)          | 90   |       |       | 90    |       |       | 90   |      |       | 90    |      |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.88  | 0.97  | 0.91  | 0.91  | 1.00 | 1.00 | 1.00  | 0.97  | 1.00 | 0.88  |
| Frt                        |      |       | 0.850 |       |       |       |      |      |       |       |      | 0.850 |
| Flt Protected              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (prot)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Flt Permitted              |      |       |       | 0.950 |       |       |      |      |       | 0.950 |      |       |
| Satd. Flow (perm)          | 0    | 4818  | 2640  | 3252  | 4818  | 0     | 0    | 0    | 0     | 3252  | 0    | 2640  |
| Right Turn on Red          |      |       | Yes   |       |       | Yes   |      |      | Yes   |       |      | Yes   |
| Satd. Flow (RTOR)          |      |       | 851   |       |       |       |      |      |       |       |      | 55    |
| Link Speed (mph)           |      | 45    |       |       | 45    |       |      | 30   |       |       | 30   |       |
| Link Distance (ft)         |      | 453   |       |       | 598   |       |      | 824  |       |       | 1360 |       |
| Travel Time (s)            |      | 6.9   |       |       | 9.1   |       |      | 18.7 |       |       | 30.9 |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1516  | 877   | 270   | 1838  | 4     | 0    | 0    | 0     | 547   | 0    | 897   |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |      |      |       |       |      |       |
| Lane Group Flow (vph)      | 0    | 1516  | 877   | 270   | 1842  | 0     | 0    | 0    | 0     | 547   | 0    | 897   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    | No   | No   | No    | No    | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right | Left  | Left | Right |
| Median Width(ft)           |      | 24    |       |       | 24    |       |      | 24   |       |       | 24   |       |
| Link Offset(ft)            |      | 0     |       |       | 0     |       |      | 0    |       |       | 0    |       |
| Crosswalk Width(ft)        |      | 16    |       |       | 16    |       |      | 16   |       |       | 16   |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |      |      |       |       |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     | 15    |      | 9     |
| Number of Detectors        |      | 2     | 1     | 1     | 2     |       |      |      |       | 1     |      | 1     |
| Detector Template          |      | Thru  | Right | Left  | Thru  |       |      |      |       | Left  |      | Right |
| Leading Detector (ft)      |      | 100   | 20    | 20    | 100   |       |      |      |       | 20    |      | 20    |
| Trailing Detector (ft)     |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     | 0     | 0     |       |      |      |       | 0     |      | 0     |
| Detector 1 Size(ft)        |      | 6     | 20    | 20    | 6     |       |      |      |       | 20    |      | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |      |      |       | Cl+Ex |      | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |      |      |       | 0.0   |      | 0.0   |
| Detector 2 Position(ft)    |      | 94    |       |       | 94    |       |      |      |       |       |      |       |
| Detector 2 Size(ft)        |      | 6     |       |       | 6     |       |      |      |       |       |      |       |
| Detector 2 Type            |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |       |      |       |
| Detector 2 Channel         |      |       |       |       |       |       |      |      |       |       |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |       | 0.0   |       |      |      |       |       |      |       |
| Turn Type                  |      | NA    | Perm  | Prot  | NA    |       |      |      |       | Prot  |      | Prot  |
| Protected Phases           |      | 2     |       |       | 1     | 6     |      |      |       | 4     |      | 4     |
| Permitted Phases           |      | 2     |       |       |       |       |      |      |       |       |      |       |

Lanes, Volumes, Timings  
 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road

PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group              | EBL | EBT   | EBR   | WBL   | WBT   | WBR | NBL | NBT | NBR | SBL   | SBT  | SBR   |
|-------------------------|-----|-------|-------|-------|-------|-----|-----|-----|-----|-------|------|-------|
| Detector Phase          |     | 2     | 2     | 1     | 6     |     |     |     |     | 4     |      | 4     |
| Switch Phase            |     |       |       |       |       |     |     |     |     |       |      |       |
| Minimum Initial (s)     |     | 5.0   | 5.0   | 5.0   | 5.0   |     |     |     |     | 5.0   |      | 5.0   |
| Minimum Split (s)       |     | 20.5  | 20.5  | 9.5   | 31.5  |     |     |     |     | 9.5   |      | 9.5   |
| Total Split (s)         |     | 51.0  | 51.0  | 18.0  | 69.0  |     |     |     |     | 51.0  |      | 51.0  |
| Total Split (%)         |     | 42.5% | 42.5% | 15.0% | 57.5% |     |     |     |     | 42.5% |      | 42.5% |
| Maximum Green (s)       |     | 46.5  | 46.5  | 13.5  | 64.5  |     |     |     |     | 46.5  |      | 46.5  |
| Yellow Time (s)         |     | 3.5   | 3.5   | 3.5   | 3.5   |     |     |     |     | 3.5   |      | 3.5   |
| All-Red Time (s)        |     | 1.0   | 1.0   | 1.0   | 1.0   |     |     |     |     | 1.0   |      | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |     |     |     | 0.0   |      | 0.0   |
| Total Lost Time (s)     |     | 4.5   | 4.5   | 4.5   | 4.5   |     |     |     |     | 4.5   |      | 4.5   |
| Lead/Lag                |     | Lead  | Lead  | Lag   |       |     |     |     |     |       |      |       |
| Lead-Lag Optimize?      |     | Yes   | Yes   | Yes   |       |     |     |     |     |       |      |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   | 3.0   | 3.0   |     |     |     |     | 3.0   |      | 3.0   |
| Recall Mode             |     | C-Max | C-Max | None  | C-Max |     |     |     |     | None  |      | None  |
| Walk Time (s)           |     | 7.0   | 7.0   |       | 7.0   |     |     |     |     |       |      |       |
| Flash Dont Walk (s)     |     | 9.0   | 9.0   |       | 20.0  |     |     |     |     |       |      |       |
| Pedestrian Calls (#/hr) |     | 2     | 2     |       | 2     |     |     |     |     |       |      |       |
| Act Effct Green (s)     |     | 49.0  | 49.0  | 13.5  | 67.0  |     |     |     |     | 44.0  |      | 44.0  |
| Actuated g/C Ratio      |     | 0.41  | 0.41  | 0.11  | 0.56  |     |     |     |     | 0.37  |      | 0.37  |
| v/c Ratio               |     | 0.77  | 0.55  | 0.74  | 0.68  |     |     |     |     | 0.46  |      | 0.90  |
| Control Delay           |     | 20.9  | 2.0   | 62.9  | 20.9  |     |     |     |     | 30.0  |      | 45.8  |
| Queue Delay             |     | 1.2   | 0.5   | 0.0   | 0.2   |     |     |     |     | 0.0   |      | 0.0   |
| Total Delay             |     | 22.1  | 2.5   | 62.9  | 21.0  |     |     |     |     | 30.0  |      | 45.8  |
| LOS                     |     | C     | A     | E     | C     |     |     |     |     | C     |      | D     |
| Approach Delay          |     | 14.9  |       |       | 26.4  |     |     |     |     |       |      | 39.8  |
| Approach LOS            |     | B     |       |       | C     |     |     |     |     |       |      | D     |
| Queue Length 50th (ft)  |     | 173   | 25    | 105   | 315   |     |     |     |     | 158   |      | 338   |
| Queue Length 95th (ft)  |     | m176  | m23   | #159  | 391   |     |     |     |     | 208   |      | 438   |
| Internal Link Dist (ft) |     | 373   |       |       | 518   |     |     | 744 |     |       | 1280 |       |
| Turn Bay Length (ft)    |     |       |       | 70    |       |     |     |     |     |       |      |       |
| Base Capacity (vph)     |     | 1967  | 1581  | 365   | 2690  |     |     |     |     | 1260  |      | 1056  |
| Starvation Cap Reductn  |     | 236   | 317   | 0     | 205   |     |     |     |     | 0     |      | 0     |
| Spillback Cap Reductn   |     | 0     | 0     | 0     | 32    |     |     |     |     | 0     |      | 0     |
| Storage Cap Reductn     |     | 0     | 0     | 0     | 0     |     |     |     |     | 0     |      | 0     |
| Reduced v/c Ratio       |     | 0.88  | 0.69  | 0.74  | 0.74  |     |     |     |     | 0.43  |      | 0.85  |

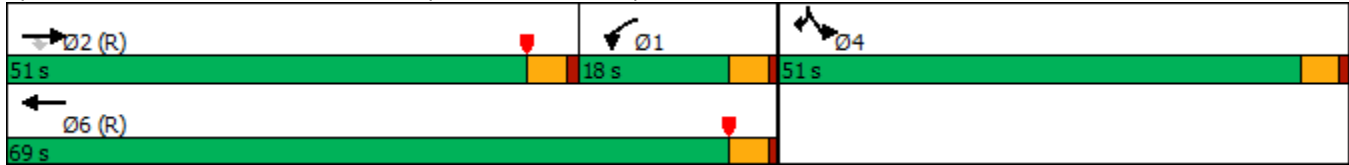
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 112 (93%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.90  
 Intersection Signal Delay: 25.0  
 Intersection LOS: C  
 Intersection Capacity Utilization 78.2%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: SR-57 SB On-Ramp/SR-57 SB Off-Ramp & Lambert Road





Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group                 | EBL  | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT  | NBR   | SBL  | SBT  | SBR   |
|----------------------------|------|-------|-------|------|-------|-------|-------|------|-------|------|------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑     |      | ↑↑↑   | ↑     | ↑↑    |      | ↑     |      |      |       |
| Traffic Volume (vph)       | 0    | 1724  | 605   | 0    | 1215  | 573   | 710   | 0    | 330   | 0    | 0    | 0     |
| Future Volume (vph)        | 0    | 1724  | 605   | 0    | 1215  | 573   | 710   | 0    | 330   | 0    | 0    | 0     |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800 | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 0    |       | 100   | 0    |       | 0     | 215   |      | 0     | 0    |      | 0     |
| Storage Lanes              | 0    |       | 1     | 0    |       | 1     | 1     |      | 1     | 0    |      | 0     |
| Taper Length (ft)          | 90   |       |       | 90   |       |       | 90    |      |       | 90   |      |       |
| Lane Util. Factor          | 1.00 | 0.86  | 0.86  | 1.00 | 0.91  | 1.00  | 0.97  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Frt                        |      | 0.993 | 0.850 |      |       | 0.850 |       |      | 0.850 |      |      |       |
| Flt Protected              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (prot)          | 0    | 4521  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Flt Permitted              |      |       |       |      |       |       | 0.950 |      |       |      |      |       |
| Satd. Flow (perm)          | 0    | 4521  | 1290  | 0    | 4818  | 1500  | 3252  | 0    | 1500  | 0    | 0    | 0     |
| Right Turn on Red          |      |       | Yes   |      |       | Yes   |       |      | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |      | 9     | 284   |      |       | 425   |       |      | 16    |      |      |       |
| Link Speed (mph)           |      | 45    |       |      | 45    |       |       | 30   |       |      |      | 30    |
| Link Distance (ft)         |      | 598   |       |      | 654   |       |       | 831  |       |      |      | 1116  |
| Travel Time (s)            |      | 9.1   |       |      | 9.9   |       |       | 18.9 |       |      |      | 25.4  |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 0    | 1724  | 605   | 0    | 1215  | 573   | 710   | 0    | 330   | 0    | 0    | 0     |
| Shared Lane Traffic (%)    |      |       | 14%   |      |       |       |       |      |       |      |      |       |
| Lane Group Flow (vph)      | 0    | 1809  | 520   | 0    | 1215  | 573   | 710   | 0    | 330   | 0    | 0    | 0     |
| Enter Blocked Intersection | No   | No    | No    | No   | No    | No    | No    | No   | No    | No   | No   | No    |
| Lane Alignment             | Left | Left  | Right | Left | Left  | Right | Left  | Left | Right | Left | Left | Right |
| Median Width(ft)           |      | 24    |       |      | 24    |       |       | 24   |       |      |      | 24    |
| Link Offset(ft)            |      | 0     |       |      | 0     |       |       | 0    |       |      |      | 0     |
| Crosswalk Width(ft)        |      | 16    |       |      | 16    |       |       | 16   |       |      |      | 16    |
| Two way Left Turn Lane     |      |       |       |      |       |       |       |      |       |      |      |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15   |       | 9     | 15   |       | 9     | 15    |      | 9     | 15   |      | 9     |
| Number of Detectors        |      | 2     | 1     |      | 2     | 1     | 1     |      | 1     |      |      |       |
| Detector Template          |      | Thru  | Right |      | Thru  | Right | Left  |      | Right |      |      |       |
| Leading Detector (ft)      |      | 100   | 20    |      | 100   | 20    | 20    |      | 20    |      |      |       |
| Trailing Detector (ft)     |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Position(ft)    |      | 0     | 0     |      | 0     | 0     | 0     |      | 0     |      |      |       |
| Detector 1 Size(ft)        |      | 6     | 20    |      | 6     | 20    | 20    |      | 20    |      |      |       |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |      | Cl+Ex | Cl+Ex | Cl+Ex |      | Cl+Ex |      |      |       |
| Detector 1 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |      | 0.0   | 0.0   | 0.0   |      | 0.0   |      |      |       |
| Detector 2 Position(ft)    |      | 94    |       |      | 94    |       |       |      |       |      |      |       |
| Detector 2 Size(ft)        |      | 6     |       |      | 6     |       |       |      |       |      |      |       |
| Detector 2 Type            |      | Cl+Ex |       |      | Cl+Ex |       |       |      |       |      |      |       |
| Detector 2 Channel         |      |       |       |      |       |       |       |      |       |      |      |       |
| Detector 2 Extend (s)      |      | 0.0   |       |      | 0.0   |       |       |      |       |      |      |       |
| Turn Type                  |      | NA    | Perm  |      | NA    | Free  | Prot  |      | Perm  |      |      |       |
| Protected Phases           |      | 2     |       |      | 6     |       | 3     |      |       |      |      |       |
| Permitted Phases           |      |       | 2     |      |       | Free  |       |      | 3     |      |      |       |

Lanes, Volumes, Timings  
 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group              | EBL | EBT   | EBR   | WBL | WBT   | WBR   | NBL   | NBT  | NBR   | SBL | SBT  | SBR |
|-------------------------|-----|-------|-------|-----|-------|-------|-------|------|-------|-----|------|-----|
| Detector Phase          |     | 2     | 2     |     | 6     |       | 3     |      | 3     |     |      |     |
| Switch Phase            |     |       |       |     |       |       |       |      |       |     |      |     |
| Minimum Initial (s)     |     | 5.0   | 5.0   |     | 5.0   |       | 5.0   |      | 5.0   |     |      |     |
| Minimum Split (s)       |     | 36.5  | 36.5  |     | 20.5  |       | 23.5  |      | 23.5  |     |      |     |
| Total Split (s)         |     | 71.0  | 71.0  |     | 71.0  |       | 49.0  |      | 49.0  |     |      |     |
| Total Split (%)         |     | 59.2% | 59.2% |     | 59.2% |       | 40.8% |      | 40.8% |     |      |     |
| Maximum Green (s)       |     | 66.5  | 66.5  |     | 66.5  |       | 44.5  |      | 44.5  |     |      |     |
| Yellow Time (s)         |     | 3.5   | 3.5   |     | 3.5   |       | 3.5   |      | 3.5   |     |      |     |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   |       | 1.0   |      | 1.0   |     |      |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   |       | 0.0   |      | 0.0   |     |      |     |
| Total Lost Time (s)     |     | 4.5   | 4.5   |     | 4.5   |       | 4.5   |      | 4.5   |     |      |     |
| Lead/Lag                |     |       |       |     |       |       |       |      |       |     |      |     |
| Lead-Lag Optimize?      |     |       |       |     |       |       |       |      |       |     |      |     |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   |       | 3.0   |      | 3.0   |     |      |     |
| Recall Mode             |     | C-Max | C-Max |     | C-Max |       | None  |      | None  |     |      |     |
| Walk Time (s)           |     | 7.0   | 7.0   |     |       |       |       |      |       |     |      |     |
| Flash Dont Walk (s)     |     | 25.0  | 25.0  |     |       |       |       |      |       |     |      |     |
| Pedestrian Calls (#/hr) |     | 2     | 2     |     |       |       |       |      |       |     |      |     |
| Act Effct Green (s)     |     | 77.3  | 77.3  |     | 77.3  | 120.0 | 33.7  |      | 33.7  |     |      |     |
| Actuated g/C Ratio      |     | 0.64  | 0.64  |     | 0.64  | 1.00  | 0.28  |      | 0.28  |     |      |     |
| v/c Ratio               |     | 0.62  | 0.56  |     | 0.39  | 0.38  | 0.78  |      | 0.76  |     |      |     |
| Control Delay           |     | 7.7   | 4.9   |     | 3.4   | 0.5   | 45.5  |      | 48.8  |     |      |     |
| Queue Delay             |     | 0.2   | 0.5   |     | 0.0   | 0.0   | 0.0   |      | 0.0   |     |      |     |
| Total Delay             |     | 8.0   | 5.4   |     | 3.4   | 0.5   | 45.5  |      | 48.8  |     |      |     |
| LOS                     |     | A     | A     |     | A     | A     | D     |      | D     |     |      |     |
| Approach Delay          |     | 7.4   |       |     | 2.5   |       |       | 46.5 |       |     |      |     |
| Approach LOS            |     | A     |       |     | A     |       |       | D    |       |     |      |     |
| Queue Length 50th (ft)  |     | 150   | 59    |     | 47    | 0     | 261   |      | 224   |     |      |     |
| Queue Length 95th (ft)  |     | 185   | 86    |     | 73    | m0    | 295   |      | 301   |     |      |     |
| Internal Link Dist (ft) |     | 518   |       |     | 574   |       |       | 751  |       |     | 1036 |     |
| Turn Bay Length (ft)    |     |       | 100   |     |       |       | 215   |      |       |     |      |     |
| Base Capacity (vph)     |     | 2914  | 931   |     | 3102  | 1500  | 1205  |      | 566   |     |      |     |
| Starvation Cap Reductn  |     | 404   | 126   |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Spillback Cap Reductn   |     | 128   | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     | 0     |      | 0     |     |      |     |
| Reduced v/c Ratio       |     | 0.72  | 0.65  |     | 0.39  | 0.38  | 0.59  |      | 0.58  |     |      |     |

Intersection Summary

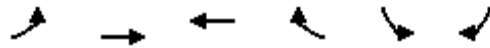
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 10 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow  
 Natural Cycle: 60  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay: 13.6  
 Intersection LOS: B  
 Intersection Capacity Utilization 69.0%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: SR-57 NB Off-Ramp/SR-57 NB On-Ramp & Lambert Road

|          |      |      |
|----------|------|------|
| → Ø2 (R) | ↑    | ↖ Ø3 |
| 71 s     | 49 s |      |
| ← Ø6 (R) | ↑    |      |
| 71 s     |      |      |

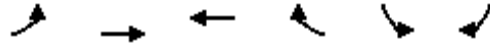
Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SBL   | SBR   |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations        |      | ↑↑↑   | ↑↑↑   |       | ↓↓↓   | ↓     |
| Traffic Volume (vph)       | 0    | 1933  | 2753  | 0     | 764   | 619   |
| Future Volume (vph)        | 0    | 1933  | 2753  | 0     | 764   | 619   |
| Ideal Flow (vphpl)         | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 0    |       |       | 0     | 0     | 260   |
| Storage Lanes              | 0    |       |       | 0     | 2     | 1     |
| Taper Length (ft)          | 90   |       |       |       | 90    |       |
| Lane Util. Factor          | 1.00 | 0.91  | 0.91  | 1.00  | 0.97  | 0.91  |
| Frt                        |      |       |       |       | 0.971 | 0.850 |
| Flt Protected              |      |       |       |       | 0.961 |       |
| Satd. Flow (prot)          | 0    | 4818  | 4818  | 0     | 3195  | 1365  |
| Flt Permitted              |      |       |       |       | 0.961 |       |
| Satd. Flow (perm)          | 0    | 4818  | 4818  | 0     | 3195  | 1365  |
| Right Turn on Red          |      |       |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |      |       |       |       | 1     | 1     |
| Link Speed (mph)           |      | 45    | 45    |       | 30    |       |
| Link Distance (ft)         |      | 293   | 273   |       | 775   |       |
| Travel Time (s)            |      | 4.4   | 4.1   |       | 17.6  |       |
| Peak Hour Factor           | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 0    | 1933  | 2753  | 0     | 764   | 619   |
| Shared Lane Traffic (%)    |      |       |       |       |       | 30%   |
| Lane Group Flow (vph)      | 0    | 1933  | 2753  | 0     | 950   | 433   |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |
| Median Width(ft)           |      | 0     | 0     |       | 24    |       |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    | 16    |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |
| Headway Factor             | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |
| Number of Detectors        |      | 2     | 2     |       | 1     | 1     |
| Detector Template          |      | Thru  | Thru  |       | Left  | Right |
| Leading Detector (ft)      |      | 100   | 100   |       | 20    | 20    |
| Trailing Detector (ft)     |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Position(ft)    |      | 0     | 0     |       | 0     | 0     |
| Detector 1 Size(ft)        |      | 6     | 6     |       | 20    | 20    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |      |       |       |       |       |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   |       | 0.0   | 0.0   |
| Detector 2 Position(ft)    |      | 94    | 94    |       |       |       |
| Detector 2 Size(ft)        |      | 6     | 6     |       |       |       |
| Detector 2 Type            |      | Cl+Ex | Cl+Ex |       |       |       |
| Detector 2 Channel         |      |       |       |       |       |       |
| Detector 2 Extend (s)      |      | 0.0   | 0.0   |       |       |       |
| Turn Type                  |      | NA    | NA    |       | Prot  | Prot  |
| Protected Phases           |      | 4     | 8     |       | 6     | 6     |
| Permitted Phases           |      |       |       |       |       |       |

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp



| Lane Group              | EBL | EBT   | WBT   | WBR | SBL   | SBR   |
|-------------------------|-----|-------|-------|-----|-------|-------|
| Detector Phase          |     | 4     | 8     |     | 6     | 6     |
| Switch Phase            |     |       |       |     |       |       |
| Minimum Initial (s)     |     | 6.0   | 6.0   |     | 6.0   | 6.0   |
| Minimum Split (s)       |     | 11.0  | 25.0  |     | 11.0  | 11.0  |
| Total Split (s)         |     | 39.0  | 39.0  |     | 21.0  | 21.0  |
| Total Split (%)         |     | 65.0% | 65.0% |     | 35.0% | 35.0% |
| Maximum Green (s)       |     | 34.0  | 34.0  |     | 16.0  | 16.0  |
| Yellow Time (s)         |     | 4.0   | 4.0   |     | 4.0   | 4.0   |
| All-Red Time (s)        |     | 1.0   | 1.0   |     | 1.0   | 1.0   |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Lost Time (s)     |     | 5.0   | 5.0   |     | 5.0   | 5.0   |
| Lead/Lag                |     |       |       |     |       |       |
| Lead-Lag Optimize?      |     |       |       |     |       |       |
| Vehicle Extension (s)   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |
| Recall Mode             |     | C-Max | C-Max |     | Max   | Max   |
| Walk Time (s)           |     |       | 7.0   |     |       |       |
| Flash Dont Walk (s)     |     |       | 13.0  |     |       |       |
| Pedestrian Calls (#/hr) |     |       | 2     |     |       |       |
| Act Effct Green (s)     |     | 34.0  | 34.0  |     | 16.0  | 16.0  |
| Actuated g/C Ratio      |     | 0.57  | 0.57  |     | 0.27  | 0.27  |
| v/c Ratio               |     | 0.71  | 1.01  |     | 1.12  | 1.19  |
| Control Delay           |     | 11.2  | 22.0  |     | 92.1  | 135.0 |
| Queue Delay             |     | 0.0   | 0.0   |     | 0.0   | 0.0   |
| Total Delay             |     | 11.2  | 22.0  |     | 92.1  | 135.0 |
| LOS                     |     | B     | C     |     | F     | F     |
| Approach Delay          |     | 11.2  | 22.0  |     | 105.5 |       |
| Approach LOS            |     | B     | C     |     | F     |       |
| Queue Length 50th (ft)  |     | 164   | ~368  |     | ~211  | ~216  |
| Queue Length 95th (ft)  |     | 214   | m294  |     | #319  | #389  |
| Internal Link Dist (ft) |     | 213   | 193   |     | 695   |       |
| Turn Bay Length (ft)    |     |       |       |     |       | 260   |
| Base Capacity (vph)     |     | 2730  | 2730  |     | 852   | 364   |
| Starvation Cap Reductn  |     | 0     | 0     |     | 0     | 0     |
| Spillback Cap Reductn   |     | 0     | 0     |     | 0     | 0     |
| Storage Cap Reductn     |     | 0     | 0     |     | 0     | 0     |
| Reduced v/c Ratio       |     | 0.71  | 1.01  |     | 1.12  | 1.19  |

Intersection Summary

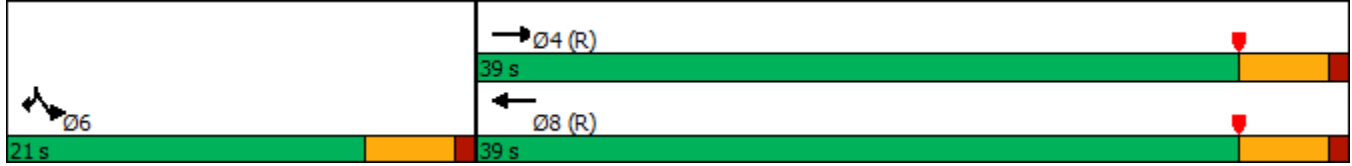
Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 60  
 Offset: 9 (15%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 90  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.19  
 Intersection Signal Delay: 37.6  
 Intersection Capacity Utilization 148.3%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service H  
 ~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 16: Imperial Highway & SR-57 SB Off-Ramp

PM Year 2045 Plus Project  
 PM Year 2045 Plus Project

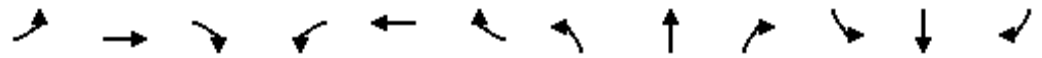
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Imperial Highway & SR-57 SB Off-Ramp



Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

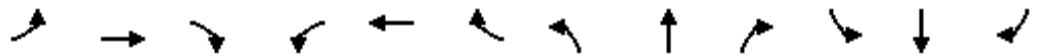
PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL  | WBT   | WBR   | NBL   | NBT   | NBR   | SBL  | SBT  | SBR   |
|----------------------------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|------|-------|
| Lane Configurations        |       |       |       |      |       |       |       |       |       |      |      |       |
| Traffic Volume (vph)       | 207   | 2145  | 0     | 0    | 2821  | 46    | 1163  | 72    | 506   | 0    | 0    | 232   |
| Future Volume (vph)        | 207   | 2145  | 0     | 0    | 2821  | 46    | 1163  | 72    | 506   | 0    | 0    | 232   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800 | 1800  | 1800  | 1800  | 1800  | 1800  | 1800 | 1800 | 1800  |
| Storage Length (ft)        | 260   |       | 0     | 0    |       | 0     | 610   |       | 350   | 0    |      | 0     |
| Storage Lanes              | 1     |       | 0     | 0    |       | 0     | 1     |       | 1     | 0    |      | 2     |
| Taper Length (ft)          | 90    |       |       | 90   |       |       | 90    |       |       | 90   |      |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00 | 0.86  | 0.86  | 0.91  | 0.86  | 0.95  | 1.00 | 1.00 | 0.88  |
| Frt                        |       |       |       |      | 0.998 |       |       | 0.968 | 0.850 |      |      | 0.850 |
| Flt Protected              | 0.950 |       |       |      |       |       | 0.950 | 0.970 |       |      |      |       |
| Satd. Flow (prot)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1425  | 1425  | 0    | 0    | 2640  |
| Flt Permitted              | 0.950 |       |       |      |       |       | 0.950 | 0.970 |       |      |      |       |
| Satd. Flow (perm)          | 1676  | 4818  | 0     | 0    | 6058  | 0     | 3051  | 1425  | 1425  | 0    | 0    | 2640  |
| Right Turn on Red          |       |       | Yes   |      |       | Yes   |       |       | Yes   |      |      | Yes   |
| Satd. Flow (RTOR)          |       |       |       |      | 3     |       |       | 11    | 100   |      |      | 244   |
| Link Speed (mph)           |       | 45    |       |      | 45    |       |       | 30    |       |      |      | 30    |
| Link Distance (ft)         |       | 271   |       |      | 540   |       |       | 932   |       |      |      | 494   |
| Travel Time (s)            |       | 4.1   |       |      | 8.2   |       |       | 21.2  |       |      |      | 11.2  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  |
| Adj. Flow (vph)            | 207   | 2145  | 0     | 0    | 2821  | 46    | 1163  | 72    | 506   | 0    | 0    | 232   |
| Shared Lane Traffic (%)    |       |       |       |      |       |       | 24%   |       | 19%   |      |      |       |
| Lane Group Flow (vph)      | 207   | 2145  | 0     | 0    | 2867  | 0     | 884   | 447   | 410   | 0    | 0    | 232   |
| Enter Blocked Intersection | No    | No    | No    | No   | No    | No    | No    | No    | No    | No   | No   | No    |
| Lane Alignment             | Left  | Left  | Right | Left | Left  | Right | Left  | Left  | Right | Left | Left | Right |
| Median Width(ft)           |       | 12    |       |      | 12    |       |       | 24    |       |      |      | 24    |
| Link Offset(ft)            |       | 0     |       |      | 0     |       |       | 0     |       |      |      | 0     |
| Crosswalk Width(ft)        |       | 16    |       |      | 16    |       |       | 16    |       |      |      | 16    |
| Two way Left Turn Lane     |       |       |       |      |       |       |       |       |       |      |      |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07 | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07 | 1.07 | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15   |       | 9     | 15    |       | 9     | 15   |      | 9     |
| Number of Detectors        | 1     | 2     |       |      | 2     |       | 1     | 2     | 1     |      |      | 1     |
| Detector Template          | Left  | Thru  |       |      | Thru  |       | Left  | Thru  | Right |      |      | Right |
| Leading Detector (ft)      | 20    | 100   |       |      | 100   |       | 20    | 100   | 20    |      |      | 20    |
| Trailing Detector (ft)     | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       |      | 0     |       | 0     | 0     | 0     |      |      | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       |      | 6     |       | 20    | 6     | 20    |      |      | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       |      | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |      |      | Cl+Ex |
| Detector 1 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       |      | 0.0   |       | 0.0   | 0.0   | 0.0   |      |      | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |      | 94    |       |       | 94    |       |      |      |       |
| Detector 2 Size(ft)        |       | 6     |       |      | 6     |       |       | 6     |       |      |      |       |
| Detector 2 Type            |       | Cl+Ex |       |      | Cl+Ex |       |       | Cl+Ex |       |      |      |       |
| Detector 2 Channel         |       |       |       |      |       |       |       |       |       |      |      |       |
| Detector 2 Extend (s)      |       | 0.0   |       |      | 0.0   |       |       | 0.0   |       |      |      |       |
| Turn Type                  | Prot  | NA    |       |      | NA    |       | Split | NA    | Prot  |      |      | Prot  |
| Protected Phases           | 7     | 4     |       |      | 8     |       | 2     | 2     | 2     |      |      | 1     |
| Permitted Phases           |       |       |       |      |       |       |       |       |       |      |      |       |

Lanes, Volumes, Timings  
 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway

PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL | WBT   | WBR | NBL   | NBT   | NBR   | SBL | SBT | SBR  |
|-------------------------|-------|-------|-----|-----|-------|-----|-------|-------|-------|-----|-----|------|
| Detector Phase          | 7     | 4     |     |     | 8     |     | 2     | 2     | 2     |     |     | 1    |
| Switch Phase            |       |       |     |     |       |     |       |       |       |     |     |      |
| Minimum Initial (s)     | 6.0   | 6.0   |     |     | 6.0   |     | 6.0   | 6.0   | 6.0   |     |     | 6.0  |
| Minimum Split (s)       | 10.0  | 32.0  |     |     | 28.0  |     | 11.0  | 11.0  | 11.0  |     |     | 11.0 |
| Total Split (s)         | 16.0  | 72.0  |     |     | 56.0  |     | 37.0  | 37.0  | 37.0  |     |     | 11.0 |
| Total Split (%)         | 13.3% | 60.0% |     |     | 46.7% |     | 30.8% | 30.8% | 30.8% |     |     | 9.2% |
| Maximum Green (s)       | 12.0  | 67.0  |     |     | 51.0  |     | 32.0  | 32.0  | 32.0  |     |     | 6.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     |     | 4.0   |     | 4.0   | 4.0   | 4.0   |     |     | 4.0  |
| All-Red Time (s)        | 1.0   | 1.0   |     |     | 1.0   |     | 1.0   | 1.0   | 1.0   |     |     | 1.0  |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     |     | 0.0   |     | 0.0   | 0.0   | 0.0   |     |     | 0.0  |
| Total Lost Time (s)     | 4.0   | 5.0   |     |     | 5.0   |     | 5.0   | 5.0   | 5.0   |     |     | 5.0  |
| Lead/Lag                | Lead  |       |     |     | Lag   |     | Lag   | Lag   | Lag   |     |     | Lead |
| Lead-Lag Optimize?      | Yes   |       |     |     | Yes   |     | Yes   | Yes   | Yes   |     |     | Yes  |
| Vehicle Extension (s)   | 3.0   | 3.0   |     |     | 3.0   |     | 3.0   | 3.0   | 3.0   |     |     | 3.0  |
| Recall Mode             | None  | C-Max |     |     | C-Max |     | Max   | Max   | Max   |     |     | None |
| Walk Time (s)           |       | 7.0   |     |     | 7.0   |     |       |       |       |     |     |      |
| Flash Dont Walk (s)     |       | 20.0  |     |     | 16.0  |     |       |       |       |     |     |      |
| Pedestrian Calls (#/hr) |       | 2     |     |     | 2     |     |       |       |       |     |     |      |
| Act Effct Green (s)     | 12.0  | 67.0  |     |     | 51.0  |     | 32.0  | 32.0  | 32.0  |     |     | 6.0  |
| Actuated g/C Ratio      | 0.10  | 0.56  |     |     | 0.42  |     | 0.27  | 0.27  | 0.27  |     |     | 0.05 |
| v/c Ratio               | 1.24  | 0.80  |     |     | 1.11  |     | 1.09  | 1.15  | 0.91  |     |     | 0.64 |
| Control Delay           | 175.4 | 20.4  |     |     | 64.4  |     | 99.7  | 133.2 | 57.0  |     |     | 14.5 |
| Queue Delay             | 0.0   | 47.6  |     |     | 0.1   |     | 0.0   | 0.1   | 5.0   |     |     | 0.0  |
| Total Delay             | 175.4 | 68.0  |     |     | 64.5  |     | 99.7  | 133.3 | 62.0  |     |     | 14.5 |
| LOS                     | F     | E     |     |     | E     |     | F     | F     | E     |     |     | B    |
| Approach Delay          |       | 77.4  |     |     | 64.5  |     |       | 99.4  |       |     |     | 14.5 |
| Approach LOS            |       | E     |     |     | E     |     |       | F     |       |     |     | B    |
| Queue Length 50th (ft)  | ~199  | 417   |     |     | ~717  |     | ~422  | ~468  | 254   |     |     | 0    |
| Queue Length 95th (ft)  | m#288 | m457  |     |     | m147  |     | #558  | #708  | #457  |     |     | 38   |
| Internal Link Dist (ft) |       | 191   |     |     | 460   |     |       | 852   |       |     |     | 414  |
| Turn Bay Length (ft)    | 260   |       |     |     |       |     | 610   |       | 350   |     |     |      |
| Base Capacity (vph)     | 167   | 2690  |     |     | 2576  |     | 813   | 388   | 453   |     |     | 363  |
| Starvation Cap Reductn  | 0     | 0     |     |     | 84    |     | 0     | 0     | 0     |     |     | 0    |
| Spillback Cap Reductn   | 0     | 1036  |     |     | 0     |     | 0     | 2     | 21    |     |     | 0    |
| Storage Cap Reductn     | 0     | 0     |     |     | 0     |     | 0     | 0     | 0     |     |     | 0    |
| Reduced v/c Ratio       | 1.24  | 1.30  |     |     | 1.15  |     | 1.09  | 1.16  | 0.95  |     |     | 0.64 |

Intersection Summary

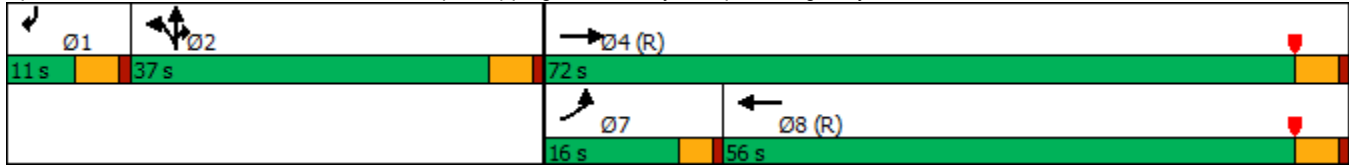
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 12 (10%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.24  
 Intersection Signal Delay: 75.6  
 Intersection LOS: E  
 Intersection Capacity Utilization 95.3%  
 ICU Level of Service F  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.



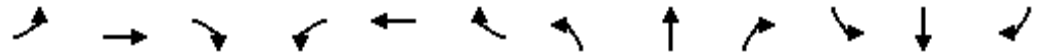
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: SR-57 NB Off-Ramp/Shopping Center Dwy & Imperial Highway



Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

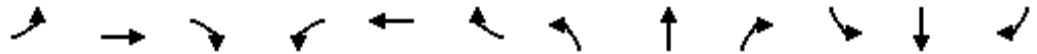
PM Year 2045 Plus Project  
PM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 311   | 2179  | 161   | 210   | 2004  | 213   | 252   | 299   | 102   | 335   | 402   | 294   |
| Future Volume (vph)        | 311   | 2179  | 161   | 210   | 2004  | 213   | 252   | 299   | 102   | 335   | 402   | 294   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 340   |       | 0     | 200   |       | 0     | 170   |       | 0     | 210   |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 1.00  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 1.00  | 1.00  |
| Frt                        |       | 0.990 |       |       | 0.986 |       |       | 0.962 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4769  | 0     | 1676  | 4750  | 0     | 3252  | 3226  | 0     | 3252  | 1765  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4769  | 0     | 1676  | 4750  | 0     | 3252  | 3226  | 0     | 3252  | 1765  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 12    |       |       | 17    |       |       | 40    |       |       |       | 234   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 540   |       |       | 1433  |       |       | 1004  |       |       |       | 3109  |
| Travel Time (s)            |       | 12.3  |       |       | 32.6  |       |       | 22.8  |       |       |       | 70.7  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 311   | 2179  | 161   | 210   | 2004  | 213   | 252   | 299   | 102   | 335   | 402   | 294   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 311   | 2340  | 0     | 210   | 2217  | 0     | 252   | 401   | 0     | 335   | 402   | 294   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 12    |       |       | 12    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |

Lanes, Volumes, Timings  
18: Associated Road & Imperial Highway

PM Year 2045 Plus Project  
PM Year 2045 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 37.0  |     | 10.0  | 40.0  |     | 10.0  | 41.0  | 41.0  |
| Total Split (s)         | 18.0  | 53.0  |     | 14.0  | 49.0  |     | 12.0  | 40.0  |     | 13.0  | 41.0  | 41.0  |
| Total Split (%)         | 15.0% | 44.2% |     | 11.7% | 40.8% |     | 10.0% | 33.3% |     | 10.8% | 34.2% | 34.2% |
| Maximum Green (s)       | 14.0  | 48.0  |     | 10.0  | 44.0  |     | 8.0   | 35.0  |     | 9.0   | 36.0  | 36.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 25.0  |     |       | 28.0  |     |       | 29.0  | 29.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 14.0  | 48.0  |     | 10.0  | 44.0  |     | 8.0   | 35.0  |     | 9.0   | 36.0  | 36.0  |
| Actuated g/C Ratio      | 0.12  | 0.40  |     | 0.08  | 0.37  |     | 0.07  | 0.29  |     | 0.08  | 0.30  | 0.30  |
| v/c Ratio               | 1.59  | 1.22  |     | 1.51  | 1.27  |     | 1.17  | 0.41  |     | 1.38  | 0.76  | 0.48  |
| Control Delay           | 309.9 | 126.8 |     | 285.5 | 148.3 |     | 162.1 | 32.2  |     | 219.8 | 24.9  | 3.5   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.6   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.1   |
| Total Delay             | 309.9 | 126.8 |     | 285.5 | 149.0 |     | 162.1 | 32.2  |     | 219.8 | 24.9  | 3.6   |
| LOS                     | F     | F     |     | F     | F     |     | F     | C     |     | F     | C     | A     |
| Approach Delay          |       | 148.3 |     |       | 160.8 |     |       | 82.3  |     |       | 82.2  |       |
| Approach LOS            |       | F     |     |       | F     |     |       | F     |     |       | F     |       |
| Queue Length 50th (ft)  | ~343  | ~808  |     | ~225  | ~792  |     | ~119  | 117   |     | ~180  | 190   | 23    |
| Queue Length 95th (ft)  | m#457 | m#898 |     | m#310 | #898  |     | #205  | 165   |     | m#182 | m188  | m24   |
| Internal Link Dist (ft) |       | 460   |     |       | 1353  |     |       | 924   |     |       | 3029  |       |
| Turn Bay Length (ft)    | 340   |       |     | 200   |       |     | 170   |       |     | 210   |       |       |
| Base Capacity (vph)     | 195   | 1914  |     | 139   | 1752  |     | 216   | 969   |     | 243   | 529   | 613   |
| Starvation Cap Reductn  | 0     | 26    |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 312   |     | 0     | 0     |     | 0     | 0     | 15    |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.59  | 1.24  |     | 1.51  | 1.54  |     | 1.17  | 0.41  |     | 1.38  | 0.76  | 0.49  |

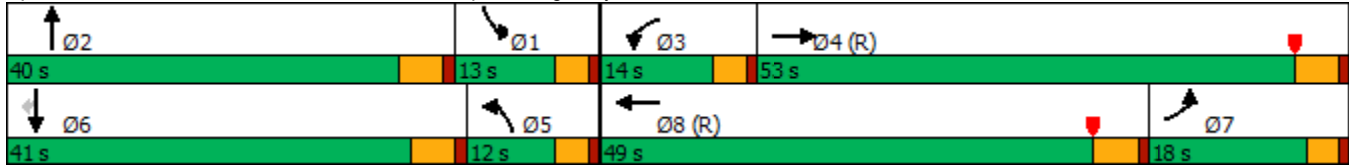
Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 4 (3%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.59   |
| Intersection Signal Delay:         | 136.3  |
| Intersection LOS:                  | F  |
| Intersection Capacity Utilization: | 109.0%   |
| ICU Level of Service:              | G  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

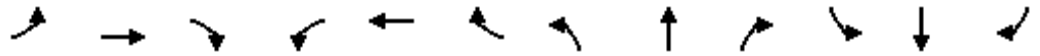
- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Associated Road & Imperial Highway



Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

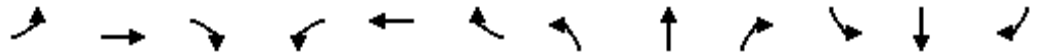
PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 22    | 2195  | 323   | 268   | 2263  | 66    | 295   | 54    | 310   | 29    | 26    | 16    |
| Future Volume (vph)        | 22    | 2195  | 323   | 268   | 2263  | 66    | 295   | 54    | 310   | 29    | 26    | 16    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 140   |       | 200   | 225   |       | 0     | 195   |       | 0     | 85    |       | 0     |
| Storage Lanes              | 1     |       | 1     | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 1.00  | 1.00  | 0.91  | 0.91  | 0.95  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       |       | 0.850 |       | 0.996 |       |       |       | 0.850 |       | 0.943 |       |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.967 |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4818  | 1500  | 1676  | 4798  | 0     | 1593  | 1621  | 1500  | 1676  | 1664  | 0     |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.967 |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4818  | 1500  | 1676  | 4798  | 0     | 1593  | 1621  | 1500  | 1676  | 1664  | 0     |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 197   |       | 6     |       |       |       | 308   |       | 16    |       |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 1433  |       |       | 3487  |       |       | 2609  |       |       | 962   |       |
| Travel Time (s)            |       | 32.6  |       |       | 79.3  |       |       | 59.3  |       |       | 21.9  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 22    | 2195  | 323   | 268   | 2263  | 66    | 295   | 54    | 310   | 29    | 26    | 16    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       | 41%   |       |       |       |       |       |
| Lane Group Flow (vph)      | 22    | 2195  | 323   | 268   | 2329  | 0     | 174   | 175   | 310   | 29    | 42    | 0     |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 12    |       |       | 12    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    |       | Split | NA    | Perm  | Split | NA    |       |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       |       |       |       | 2     |       |       |       |

Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group              | EBL  | EBT   | EBR   | WBL   | WBT   | WBR | NBL   | NBT   | NBR   | SBL  | SBT  | SBR |
|-------------------------|------|-------|-------|-------|-------|-----|-------|-------|-------|------|------|-----|
| Detector Phase          | 7    | 4     | 4     | 3     | 8     |     | 2     | 2     | 2     | 6    | 6    |     |
| Switch Phase            |      |       |       |       |       |     |       |       |       |      |      |     |
| Minimum Initial (s)     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0  | 6.0  |     |
| Minimum Split (s)       | 10.0 | 33.0  | 33.0  | 10.0  | 26.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (s)         | 10.0 | 59.0  | 59.0  | 23.0  | 72.0  |     | 27.0  | 27.0  | 27.0  | 11.0 | 11.0 |     |
| Total Split (%)         | 8.3% | 49.2% | 49.2% | 19.2% | 60.0% |     | 22.5% | 22.5% | 22.5% | 9.2% | 9.2% |     |
| Maximum Green (s)       | 6.0  | 54.0  | 54.0  | 19.0  | 67.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Yellow Time (s)         | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   |     | 4.0   | 4.0   | 4.0   | 4.0  | 4.0  |     |
| All-Red Time (s)        | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0  | 1.0  |     |
| Lost Time Adjust (s)    | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Lost Time (s)     | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   |     | 5.0   | 5.0   | 5.0   | 5.0  | 5.0  |     |
| Lead/Lag                | Lead | Lead  | Lead  | Lag   | Lag   |     |       |       |       |      |      |     |
| Lead-Lag Optimize?      | Yes  | Yes   | Yes   | Yes   | Yes   |     |       |       |       |      |      |     |
| Vehicle Extension (s)   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0  | 3.0  |     |
| Recall Mode             | None | C-Max | C-Max | None  | C-Max |     | Max   | Max   | Max   | Max  | Max  |     |
| Walk Time (s)           |      | 7.0   | 7.0   |       | 7.0   |     | 7.0   | 7.0   | 7.0   |      |      |     |
| Flash Dont Walk (s)     |      | 21.0  | 21.0  |       | 14.0  |     | 15.0  | 15.0  | 15.0  |      |      |     |
| Pedestrian Calls (#/hr) |      | 2     | 2     |       | 2     |     | 2     | 2     | 2     |      |      |     |
| Act Effct Green (s)     | 6.0  | 54.0  | 54.0  | 19.0  | 71.0  |     | 22.0  | 22.0  | 22.0  | 6.0  | 6.0  |     |
| Actuated g/C Ratio      | 0.05 | 0.45  | 0.45  | 0.16  | 0.59  |     | 0.18  | 0.18  | 0.18  | 0.05 | 0.05 |     |
| v/c Ratio               | 0.27 | 1.01  | 0.41  | 1.01  | 0.82  |     | 0.60  | 0.59  | 0.59  | 0.35 | 0.43 |     |
| Control Delay           | 82.6 | 18.0  | 1.2   | 69.7  | 4.2   |     | 54.4  | 54.0  | 9.9   | 67.0 | 52.3 |     |
| Queue Delay             | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  |     |
| Total Delay             | 82.6 | 18.0  | 1.2   | 69.7  | 4.2   |     | 54.4  | 54.0  | 9.9   | 67.0 | 52.3 |     |
| LOS                     | F    | B     | A     | E     | A     |     | D     | D     | A     | E    | D    |     |
| Approach Delay          |      | 16.4  |       |       | 11.0  |     |       | 33.4  |       |      | 58.3 |     |
| Approach LOS            |      | B     |       |       | B     |     |       | C     |       |      | E    |     |
| Queue Length 50th (ft)  | 18   | ~121  | 10    | ~205  | 115   |     | 131   | 131   | 1     | 22   | 20   |     |
| Queue Length 95th (ft)  | m15  | m92   | m7    | m#222 | m109  |     | 212   | 212   | 84    | 55   | 58   |     |
| Internal Link Dist (ft) |      | 1353  |       |       | 3407  |     |       | 2529  |       |      | 882  |     |
| Turn Bay Length (ft)    | 140  |       | 200   | 225   |       |     | 195   |       |       | 85   |      |     |
| Base Capacity (vph)     | 83   | 2168  | 783   | 265   | 2841  |     | 292   | 297   | 526   | 83   | 98   |     |
| Starvation Cap Reductn  | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Spillback Cap Reductn   | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Storage Cap Reductn     | 0    | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     | 0    | 0    |     |
| Reduced v/c Ratio       | 0.27 | 1.01  | 0.41  | 1.01  | 0.82  |     | 0.60  | 0.59  | 0.59  | 0.35 | 0.43 |     |

Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 55 (46%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.01  
 Intersection Signal Delay: 16.4 Intersection LOS: B  
 Intersection Capacity Utilization 88.9% ICU Level of Service E  
 Analysis Period (min) 15

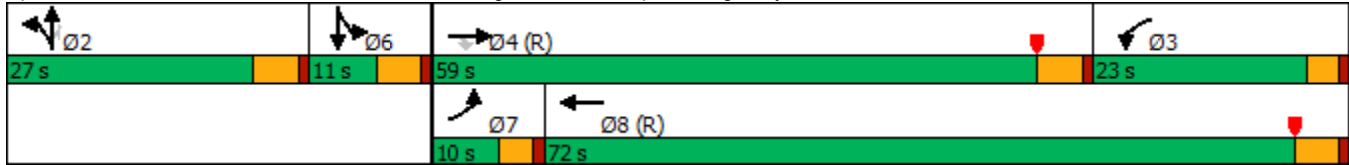
~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 19: Placentia Avenue/Castlegate Lane & Imperial Highway

PM Year 2045 Plus Project  
 PM Year 2045 Plus Project

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Placentia Avenue/Castlegate Lane & Imperial Highway



Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

PM Year 2045 Plus Project  
PM Year 2045 Plus Project

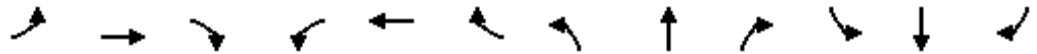


| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 248   | 1639  | 251   | 211   | 1807  | 364   | 418   | 712   | 118   | 300   | 547   | 134   |
| Future Volume (vph)        | 248   | 1639  | 251   | 211   | 1807  | 364   | 418   | 712   | 118   | 300   | 547   | 134   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 185   |       | 0     | 220   |       | 0     | 150   |       | 0     | 205   |       | 0     |
| Storage Lanes              | 2     |       | 0     | 2     |       | 0     | 2     |       | 0     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 0.91  | 0.97  | 0.91  | 0.91  | 0.97  | 0.95  | 0.95  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.980 |       |       | 0.975 |       |       | 0.979 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4721  | 0     | 3252  | 4697  | 0     | 3252  | 3283  | 0     | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4721  | 0     | 3252  | 4697  | 0     | 3252  | 3283  | 0     | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 30    |       |       | 45    |       |       | 15    |       |       |       | 136   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3487  |       |       | 3626  |       |       | 1318  |       |       |       | 1319  |
| Travel Time (s)            |       | 79.3  |       |       | 82.4  |       |       | 30.0  |       |       |       | 30.0  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 248   | 1639  | 251   | 211   | 1807  | 364   | 418   | 712   | 118   | 300   | 547   | 134   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 248   | 1890  | 0     | 211   | 2171  | 0     | 418   | 830   | 0     | 300   | 547   | 134   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   |       | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     |       | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     |       | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    |       | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       |       |       |       |       |       |       | 6     |



Lanes, Volumes, Timings  
20: Kraemer Boulevard & Imperial Highway

PM Year 2045 Plus Project  
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| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     |     | 5     | 2     |     | 1     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |     |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  |     | 10.0  | 40.0  |     | 10.0  | 31.0  |     | 10.0  | 31.0  | 31.0  |
| Total Split (s)         | 13.0  | 56.0  |     | 14.0  | 57.0  |     | 19.0  | 35.0  |     | 15.0  | 31.0  | 31.0  |
| Total Split (%)         | 10.8% | 46.7% |     | 11.7% | 47.5% |     | 15.8% | 29.2% |     | 12.5% | 25.8% | 25.8% |
| Maximum Green (s)       | 9.0   | 51.0  |     | 10.0  | 52.0  |     | 15.0  | 30.0  |     | 11.0  | 26.0  | 26.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |     | Lag   | Lead  |     | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   |     | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max |     | None  | Max   |     | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   |     |       | 7.0   |     |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  |     |       | 28.0  |     |       | 19.0  |     |       | 19.0  | 19.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     |     |       | 2     |     |       | 2     | 2     |
| Act Effct Green (s)     | 9.0   | 51.0  |     | 10.0  | 52.0  |     | 15.0  | 30.0  |     | 11.0  | 26.0  | 26.0  |
| Actuated g/C Ratio      | 0.08  | 0.42  |     | 0.08  | 0.43  |     | 0.12  | 0.25  |     | 0.09  | 0.22  | 0.22  |
| v/c Ratio               | 1.02  | 0.93  |     | 0.78  | 1.05  |     | 1.03  | 1.00  |     | 1.01  | 0.75  | 0.31  |
| Control Delay           | 69.8  | 11.5  |     | 92.6  | 46.9  |     | 103.8 | 75.0  |     | 107.0 | 38.8  | 5.7   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 69.8  | 11.5  |     | 92.6  | 46.9  |     | 103.8 | 75.0  |     | 107.0 | 38.8  | 5.7   |
| LOS                     | E     | B     |     | F     | D     |     | F     | E     |     | F     | D     | A     |
| Approach Delay          |       | 18.2  |     |       | 50.9  |     |       | 84.7  |     |       | 55.1  |       |
| Approach LOS            |       | B     |     |       | D     |     |       | F     |     |       | E     |       |
| Queue Length 50th (ft)  | ~95   | 63    |     | 88    | ~653  |     | ~178  | 334   |     | ~128  | 203   | 20    |
| Queue Length 95th (ft)  | m#110 | m108  |     | m109  | #743  |     | #281  | #476  |     | #221  | 267   | m49   |
| Internal Link Dist (ft) |       | 3407  |     |       | 3546  |     |       | 1238  |     |       | 1239  |       |
| Turn Bay Length (ft)    | 185   |       |     | 220   |       |     | 150   |       |     | 205   |       |       |
| Base Capacity (vph)     | 243   | 2025  |     | 271   | 2060  |     | 406   | 832   |     | 298   | 726   | 431   |
| Starvation Cap Reductn  | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     |     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.02  | 0.93  |     | 0.78  | 1.05  |     | 1.03  | 1.00  |     | 1.01  | 0.75  | 0.31  |

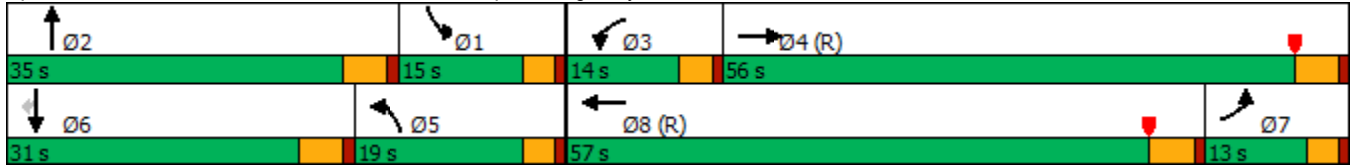
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 119 (99%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.05  
 Intersection Signal Delay: 47.4  
 Intersection LOS: D  
 Intersection Capacity Utilization 101.7%  
 ICU Level of Service G  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Kraemer Boulevard & Imperial Highway



Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

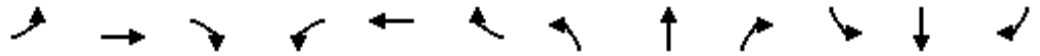
PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑↑   | ↔     | ↔↔    | ↑↑    | ↔     | ↔↔    | ↑↑    | ↔↔    |
| Traffic Volume (vph)       | 282   | 2045  | 171   | 189   | 1488  | 161   | 131   | 318   | 145   | 245   | 256   | 159   |
| Future Volume (vph)        | 282   | 2045  | 171   | 189   | 1488  | 161   | 131   | 318   | 145   | 245   | 256   | 159   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 190   |       | 315   | 260   |       | 305   | 150   |       | 150   | 240   |       | 185   |
| Storage Lanes              | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 0.97  | 0.91  | 1.00  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 3252  | 4818  | 1500  | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       |       | 151   |       |       | 161   |       |       | 136   |       |       | 159   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3626  |       |       | 3640  |       |       | 1142  |       |       |       | 3502  |
| Travel Time (s)            |       | 82.4  |       |       | 82.7  |       |       | 26.0  |       |       |       | 79.6  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 282   | 2045  | 171   | 189   | 1488  | 161   | 131   | 318   | 145   | 245   | 256   | 159   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 282   | 2045  | 171   | 189   | 1488  | 161   | 131   | 318   | 145   | 245   | 256   | 159   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       | 4     |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
 21: Valencia Avenue/ Valencia Avenue & Imperial Highway

PM Year 2045 Plus Project  
 PM Year 2045 Plus Project



| Lane Group              | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     | 4     | 3     | 8     | 8     | 5    | 2     | 2     | 1     | 6     | 6     |
| Switch Phase            |       |       |       |       |       |       |      |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 38.0  | 38.0  | 10.0  | 40.0  | 40.0  | 10.0 | 47.0  | 47.0  | 10.0  | 49.0  | 49.0  |
| Total Split (s)         | 15.0  | 51.0  | 51.0  | 10.0  | 46.0  | 46.0  | 10.0 | 47.0  | 47.0  | 12.0  | 49.0  | 49.0  |
| Total Split (%)         | 12.5% | 42.5% | 42.5% | 8.3%  | 38.3% | 38.3% | 8.3% | 39.2% | 39.2% | 10.0% | 40.8% | 40.8% |
| Maximum Green (s)       | 11.0  | 46.0  | 46.0  | 6.0   | 41.0  | 41.0  | 6.0  | 42.0  | 42.0  | 8.0   | 44.0  | 44.0  |
| Yellow Time (s)         | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0  | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0  | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   |
| Lead/Lag                | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lag  | Lead  | Lead  | Lag   | Lead  | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes  | Yes   | Yes   | Yes   | Yes   | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max | C-Max | None  | C-Max | C-Max | None | Max   | Max   | None  | Max   | Max   |
| Walk Time (s)           |       | 7.0   | 7.0   |       | 7.0   | 7.0   |      | 7.0   | 7.0   |       | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 26.0  | 26.0  |       | 28.0  | 28.0  |      | 35.0  | 35.0  |       | 37.0  | 37.0  |
| Pedestrian Calls (#/hr) |       | 2     | 2     |       | 2     | 2     |      | 2     | 2     |       | 2     | 2     |
| Act Effct Green (s)     | 11.0  | 46.0  | 46.0  | 6.0   | 41.0  | 41.0  | 6.0  | 42.0  | 42.0  | 8.0   | 44.0  | 44.0  |
| Actuated g/C Ratio      | 0.09  | 0.38  | 0.38  | 0.05  | 0.34  | 0.34  | 0.05 | 0.35  | 0.35  | 0.07  | 0.37  | 0.37  |
| v/c Ratio               | 0.95  | 1.11  | 0.26  | 1.17  | 0.90  | 0.26  | 0.81 | 0.27  | 0.24  | 1.13  | 0.21  | 0.24  |
| Control Delay           | 77.4  | 92.7  | 13.3  | 126.6 | 14.7  | 1.4   | 90.5 | 28.8  | 6.3   | 147.3 | 23.8  | 4.7   |
| Queue Delay             | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 77.4  | 92.7  | 13.3  | 126.6 | 14.7  | 1.4   | 90.5 | 28.8  | 6.3   | 147.3 | 23.8  | 4.7   |
| LOS                     | E     | F     | B     | F     | B     | A     | F    | C     | A     | F     | C     | A     |
| Approach Delay          |       | 85.5  |       |       | 25.1  |       |      | 36.9  |       |       | 65.1  |       |
| Approach LOS            |       | F     |       |       | C     |       |      | D     |       |       | E     |       |
| Queue Length 50th (ft)  | 118   | ~658  | 49    | ~86   | 123   | 3     | 52   | 92    | 5     | ~113  | 75    | 24    |
| Queue Length 95th (ft)  | m#139 | m#732 | m64   | m#94  | m146  | m3    | #107 | 130   | 49    | m#184 | m100  | m20   |
| Internal Link Dist (ft) |       | 3546  |       |       | 3560  |       |      | 1062  |       |       | 3422  |       |
| Turn Bay Length (ft)    | 190   |       | 315   | 260   |       | 305   | 150  |       | 150   | 240   |       | 185   |
| Base Capacity (vph)     | 298   | 1846  | 668   | 162   | 1646  | 618   | 162  | 1173  | 613   | 216   | 1229  | 650   |
| Starvation Cap Reductn  | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.95  | 1.11  | 0.26  | 1.17  | 0.90  | 0.26  | 0.81 | 0.27  | 0.24  | 1.13  | 0.21  | 0.24  |

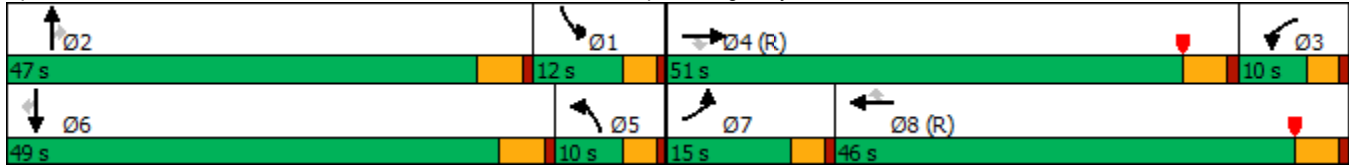
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 26 (22%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.17  
 Intersection Signal Delay: 58.1  
 Intersection LOS: E  
 Intersection Capacity Utilization 79.1%  
 ICU Level of Service D  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Valencia Avenue/ Valencia Avenue & Imperial Highway



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

PM Year 2045 Plus Project  
PM Year 2045 Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 91    | 2005  | 315   | 176   | 1570  | 896   | 306   | 657   | 143   | 1040  | 549   | 33    |
| Future Volume (vph)        | 91    | 2005  | 315   | 176   | 1570  | 896   | 306   | 657   | 143   | 1040  | 549   | 33    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.97  | 0.95  | 1.00  |
| Frt                        |       | 0.980 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (prot)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |
| Satd. Flow (perm)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 3252  | 3353  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 27    |       |       |       | 232   |       |       | 136   |       |       | 145   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       |       | 1486  |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       |       | 33.8  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 91    | 2005  | 315   | 176   | 1570  | 896   | 306   | 657   | 143   | 1040  | 549   | 33    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 91    | 2320  | 0     | 176   | 1570  | 896   | 306   | 657   | 143   | 1040  | 549   | 33    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Prot  | NA    | Perm  | Prot  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       | 5     | 2     |       | 1     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

PM Year 2045 Plus Project  
PM Year 2045 Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL    | SBT    | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-------|--------|--------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     | 8     | 5     | 2     | 2     | 1      | 6      | 6     |
| Switch Phase            |       |       |     |       |       |       |       |       |       |        |        |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0    | 6.0    | 6.0   |
| Minimum Split (s)       | 10.0  | 46.0  |     | 10.0  | 38.0  | 38.0  | 10.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (s)         | 10.0  | 46.0  |     | 10.0  | 46.0  | 46.0  | 16.0  | 54.0  | 54.0  | 10.0   | 48.0   | 48.0  |
| Total Split (%)         | 8.3%  | 38.3% |     | 8.3%  | 38.3% | 38.3% | 13.3% | 45.0% | 45.0% | 8.3%   | 40.0%  | 40.0% |
| Maximum Green (s)       | 6.0   | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   | 3.0   | 4.0   | 4.0   | 3.0    | 4.0    | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0    | 1.0    | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   | 4.0   | 5.0   | 5.0   | 4.0    | 5.0    | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  | Lead  | Lag   | Lag   | Lag   | Lead   | Lead   | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes    | Yes    | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0    | 3.0    | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max | C-Max | None  | Max   | Max   | None   | Max    | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   | 7.0   |       | 7.0   | 7.0   |        | 7.0    | 7.0   |
| Flash Dont Walk (s)     |       | 34.0  |     |       | 26.0  | 26.0  |       | 42.0  | 42.0  |        | 36.0   | 36.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     | 2     |       | 2     | 2     |        | 2      | 2     |
| Act Effct Green (s)     | 6.0   | 41.0  |     | 6.0   | 41.0  | 41.0  | 12.0  | 49.0  | 49.0  | 6.0    | 43.0   | 43.0  |
| Actuated g/C Ratio      | 0.05  | 0.34  |     | 0.05  | 0.34  | 0.34  | 0.10  | 0.41  | 0.41  | 0.05   | 0.36   | 0.36  |
| v/c Ratio               | 1.10  | 1.42  |     | 1.09  | 0.95  | 1.35  | 0.94  | 0.48  | 0.21  | 6.42   | 0.46   | 0.05  |
| Control Delay           | 105.7 | 218.2 |     | 148.5 | 52.5  | 191.8 | 91.0  | 27.6  | 5.0   | 2455.9 | 30.9   | 0.1   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0    | 0.0    | 0.0   |
| Total Delay             | 105.7 | 218.2 |     | 148.5 | 52.5  | 191.8 | 91.0  | 27.6  | 5.0   | 2455.9 | 30.9   | 0.1   |
| LOS                     | F     | F     |     | F     | D     | F     | F     | C     | A     | F      | C      | A     |
| Approach Delay          |       | 214.0 |     |       | 106.1 |       |       | 42.2  |       |        | 1585.1 |       |
| Approach LOS            |       | F     |     |       | F     |       |       | D     |       |        | F      |       |
| Queue Length 50th (ft)  | ~76   | ~861  |     | ~78   | 432   | ~787  | 123   | 194   | 3     | ~806   | 166    | 0     |
| Queue Length 95th (ft)  | m#65  | m#741 |     | #153  | #537  | #1038 | #212  | 249   | 43    | m#880  | m165   | m0    |
| Internal Link Dist (ft) |       | 3560  |     |       | 1794  |       |       | 838   |       |        | 1406   |       |
| Turn Bay Length (ft)    | 220   |       |     | 230   |       | 270   | 135   |       | 100   | 185    |        | 50    |
| Base Capacity (vph)     | 83    | 1630  |     | 162   | 1646  | 665   | 325   | 1369  | 692   | 162    | 1201   | 630   |
| Starvation Cap Reductn  | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0      | 0      | 0     |
| Reduced v/c Ratio       | 1.10  | 1.42  |     | 1.09  | 0.95  | 1.35  | 0.94  | 0.48  | 0.21  | 6.42   | 0.46   | 0.05  |

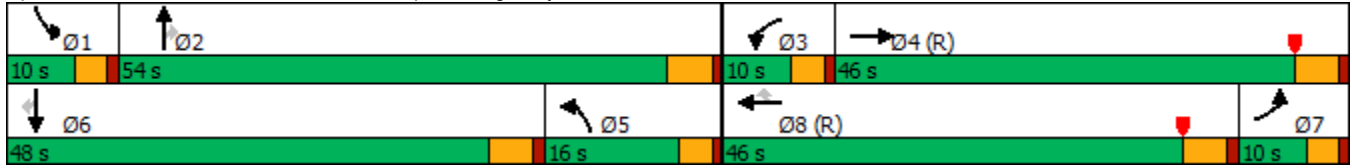
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 80 (67%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 6.42  
 Intersection Signal Delay: 438.8  
 Intersection LOS: F  
 Intersection Capacity Utilization 119.1%  
 ICU Level of Service H  
 Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Rose Drive & Imperial Highway





*APPENDIX F-VI*

**YEAR 2045 PLUS PROJECT WITH MITIGATION  
TRAFFIC CONDITIONS**

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

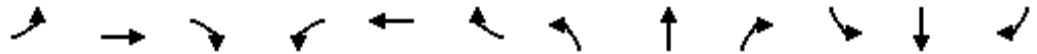
AM Year 2045 Plus Project MIT  
AM Year 2045 Plus Project MIT



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 46    | 1403  | 277   | 294   | 1644  | 619   | 280   | 250   | 160   | 968   | 615   | 38    |
| Future Volume (vph)        | 46    | 1403  | 277   | 294   | 1644  | 619   | 280   | 250   | 160   | 968   | 615   | 38    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.86  | 0.86  | 1.00  |
| Frt                        |       | 0.975 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.988 |       |
| Satd. Flow (prot)          | 1676  | 4697  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 2884  | 2999  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.988 |       |
| Satd. Flow (perm)          | 1676  | 4697  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 2884  | 2999  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 40    |       |       |       | 158   |       |       | 152   |       |       | 152   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       | 30    |       |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       | 1486  |       |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       | 33.8  |       |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 46    | 1403  | 277   | 294   | 1644  | 619   | 280   | 250   | 160   | 968   | 615   | 38    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       | 20%   |       |       |
| Lane Group Flow (vph)      | 46    | 1680  | 0     | 294   | 1644  | 619   | 280   | 250   | 160   | 774   | 809   | 38    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       | 24    |       |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       | 0     |       |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       | 16    |       |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       | 94    |       |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       | 6     |       |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | pm+ov | Split | NA    | Perm  | Split | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     | 6     | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

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| Lane Group              | EBL  | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR  | SBL   | SBT   | SBR   |
|-------------------------|------|-------|-----|-------|-------|-------|-------|-------|------|-------|-------|-------|
| Detector Phase          | 7    | 4     |     | 3     | 8     | 6     | 2     | 2     | 2    | 6     | 6     | 6     |
| Switch Phase            |      |       |     |       |       |       |       |       |      |       |       |       |
| Minimum Initial (s)     | 6.0  | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0  | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0 | 46.0  |     | 10.0  | 41.0  | 48.0  | 11.0  | 11.0  | 11.0 | 48.0  | 48.0  | 48.0  |
| Total Split (s)         | 10.0 | 46.0  |     | 10.0  | 46.0  | 48.0  | 11.0  | 11.0  | 11.0 | 48.0  | 48.0  | 48.0  |
| Total Split (%)         | 8.7% | 40.0% |     | 8.7%  | 40.0% | 41.7% | 9.6%  | 9.6%  | 9.6% | 41.7% | 41.7% | 41.7% |
| Maximum Green (s)       | 6.0  | 41.0  |     | 6.0   | 41.0  | 43.0  | 6.0   | 6.0   | 6.0  | 43.0  | 43.0  | 43.0  |
| Yellow Time (s)         | 3.0  | 4.0   |     | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0  | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0  | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0  | 5.0   |     | 4.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag  | Lag   |     | Lead  | Lead  |       |       |       |      |       |       |       |
| Lead-Lag Optimize?      | Yes  | Yes   |     | Yes   | Yes   |       |       |       |      |       |       |       |
| Vehicle Extension (s)   | 3.0  | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None | C-Max |     | None  | C-Max | Max   | Max   | Max   | Max  | Max   | Max   | Max   |
| Walk Time (s)           |      | 7.0   |     |       | 7.0   | 7.0   |       |       |      | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     |      | 34.0  |     |       | 29.0  | 36.0  |       |       |      | 36.0  | 36.0  | 36.0  |
| Pedestrian Calls (#/hr) |      | 2     |     |       | 2     | 2     |       |       |      | 2     | 2     | 2     |
| Act Effct Green (s)     | 6.0  | 41.0  |     | 6.0   | 43.0  | 91.0  | 6.0   | 6.0   | 6.0  | 43.0  | 43.0  | 43.0  |
| Actuated g/C Ratio      | 0.05 | 0.36  |     | 0.05  | 0.37  | 0.79  | 0.05  | 0.05  | 0.05 | 0.37  | 0.37  | 0.37  |
| v/c Ratio               | 0.53 | 0.99  |     | 1.74  | 0.91  | 0.51  | 1.66  | 1.44  | 0.72 | 0.72  | 0.72  | 0.06  |
| Control Delay           | 75.1 | 55.4  |     | 388.9 | 43.7  | 4.8   | 354.6 | 265.3 | 28.7 | 35.4  | 35.3  | 0.2   |
| Queue Delay             | 0.0  | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Delay             | 75.1 | 55.4  |     | 388.9 | 43.7  | 4.8   | 354.6 | 265.3 | 28.7 | 35.4  | 35.3  | 0.2   |
| LOS                     | E    | E     |     | F     | D     | A     | F     | F     | C    | D     | D     | A     |
| Approach Delay          |      | 55.9  |     |       | 74.0  |       |       | 246.7 |      |       | 34.5  |       |
| Approach LOS            |      | E     |     |       | E     |       |       | F     |      |       | C     |       |
| Queue Length 50th (ft)  | 34   | 441   |     | ~166  | 431   | 98    | ~155  | ~132  | 6    | 281   | 295   | 0     |
| Queue Length 95th (ft)  | #82  | #559  |     | #256  | #540  | 158   | #243  | #217  | #97  | 364   | 379   | 0     |
| Internal Link Dist (ft) |      | 3560  |     |       | 1794  |       |       | 838   |      |       | 1406  |       |
| Turn Bay Length (ft)    | 220  |       |     | 230   |       | 270   | 135   |       | 100  | 185   |       | 50    |
| Base Capacity (vph)     | 87   | 1700  |     | 169   | 1801  | 1219  | 169   | 174   | 222  | 1078  | 1121  | 656   |
| Starvation Cap Reductn  | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     |
| Storage Cap Reductn     | 0    | 0     |     | 0     | 0     | 0     | 0     | 0     | 0    | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.53 | 0.99  |     | 1.74  | 0.91  | 0.51  | 1.66  | 1.44  | 0.72 | 0.72  | 0.72  | 0.06  |

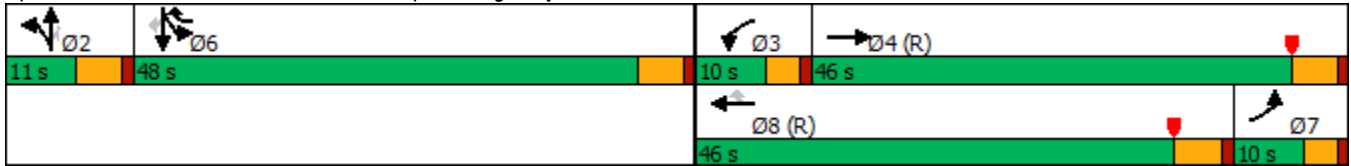
Intersection Summary

Area Type: Other  
 Cycle Length: 115  
 Actuated Cycle Length: 115  
 Offset: 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 115  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.74  
 Intersection Signal Delay: 77.6  
 Intersection Capacity Utilization 92.1%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service F

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 22: Rose Drive & Imperial Highway



Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

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| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 91    | 2005  | 315   | 176   | 1570  | 896   | 306   | 657   | 143   | 1040  | 549   | 33    |
| Future Volume (vph)        | 91    | 2005  | 315   | 176   | 1570  | 896   | 306   | 657   | 143   | 1040  | 549   | 33    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 220   |       | 0     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Storage Lanes              | 1     |       | 0     | 2     |       | 1     | 2     |       | 1     | 2     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.91  | 0.91  | 0.97  | 0.91  | 1.00  | 0.97  | 0.95  | 1.00  | 0.86  | 0.86  | 1.00  |
| Frt                        |       | 0.980 |       |       |       | 0.850 |       |       | 0.850 |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.984 |       |
| Satd. Flow (prot)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 2884  | 2987  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       | 0.950 | 0.984 |       |
| Satd. Flow (perm)          | 1676  | 4721  | 0     | 3252  | 4818  | 1500  | 3252  | 3353  | 1500  | 2884  | 2987  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 29    |       |       |       | 66    |       |       | 152   |       |       | 152   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3640  |       |       | 1874  |       |       | 918   |       |       |       | 1486  |
| Travel Time (s)            |       | 82.7  |       |       | 42.6  |       |       | 20.9  |       |       |       | 33.8  |
| Peak Hour Factor           | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Adj. Flow (vph)            | 91    | 2005  | 315   | 176   | 1570  | 896   | 306   | 657   | 143   | 1040  | 549   | 33    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       | 25%   |       |       |
| Lane Group Flow (vph)      | 91    | 2320  | 0     | 176   | 1570  | 896   | 306   | 657   | 143   | 780   | 809   | 33    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 24    |       |       |       | 24    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     | 1     | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  | Right | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   | 20    | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     | 20    | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | pm+ov | Split | NA    | Perm  | Split | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     | 6     | 2     | 2     |       | 6     | 6     |       |
| Permitted Phases           |       |       |       |       |       | 8     |       |       | 2     |       |       | 6     |

Lanes, Volumes, Timings  
22: Rose Drive & Imperial Highway

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| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     | 6     | 2     | 2     | 2     | 6     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |       |       |       |       |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 46.0  |     | 10.0  | 41.0  | 48.0  | 11.0  | 11.0  | 11.0  | 48.0  | 48.0  | 48.0  |
| Total Split (s)         | 11.0  | 46.0  |     | 10.0  | 45.0  | 45.0  | 14.0  | 14.0  | 14.0  | 45.0  | 45.0  | 45.0  |
| Total Split (%)         | 9.6%  | 40.0% |     | 8.7%  | 39.1% | 39.1% | 12.2% | 12.2% | 12.2% | 39.1% | 39.1% | 39.1% |
| Maximum Green (s)       | 7.0   | 41.0  |     | 6.0   | 40.0  | 40.0  | 9.0   | 9.0   | 9.0   | 40.0  | 40.0  | 40.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead  | Lead  |       |       |       |       |       |       |       |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   |       |       |       |       |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max | Max   | Max   | Max   | Max   | Max   | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   | 7.0   |       |       |       | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 34.0  |     |       | 29.0  | 36.0  |       |       |       | 36.0  | 36.0  | 36.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     | 2     |       |       |       | 2     | 2     | 2     |
| Act Effct Green (s)     | 7.0   | 41.0  |     | 6.0   | 40.0  | 85.0  | 9.0   | 9.0   | 9.0   | 40.0  | 40.0  | 40.0  |
| Actuated g/C Ratio      | 0.06  | 0.36  |     | 0.05  | 0.35  | 0.74  | 0.08  | 0.08  | 0.08  | 0.35  | 0.35  | 0.35  |
| v/c Ratio               | 0.89  | 1.36  |     | 1.04  | 0.94  | 0.80  | 1.20  | 2.51  | 0.56  | 0.78  | 0.78  | 0.05  |
| Control Delay           | 117.9 | 198.9 |     | 133.6 | 48.1  | 15.5  | 168.4 | 712.5 | 15.8  | 40.0  | 39.8  | 0.2   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Total Delay             | 117.9 | 198.9 |     | 133.6 | 48.1  | 15.5  | 168.4 | 712.5 | 15.8  | 40.0  | 39.8  | 0.2   |
| LOS                     | F     | F     |     | F     | D     | B     | F     | F     | B     | D     | D     | A     |
| Approach Delay          |       | 195.8 |     |       | 42.7  |       |       | 471.9 |       |       | 39.1  |       |
| Approach LOS            |       | F     |     |       | D     |       |       | F     |       |       | D     |       |
| Queue Length 50th (ft)  | 68    | ~830  |     | ~72   | 408   | 338   | ~142  | ~426  | 0     | 298   | 309   | 0     |
| Queue Length 95th (ft)  | #170  | #926  |     | #145  | #510  | 548   | #232  | #546  | 56    | 384   | 397   | 0     |
| Internal Link Dist (ft) |       | 3560  |     |       | 1794  |       |       | 838   |       |       | 1406  |       |
| Turn Bay Length (ft)    | 220   |       |     | 230   |       | 270   | 135   |       | 100   | 185   |       | 50    |
| Base Capacity (vph)     | 102   | 1701  |     | 169   | 1675  | 1125  | 254   | 262   | 257   | 1003  | 1038  | 620   |
| Starvation Cap Reductn  | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.89  | 1.36  |     | 1.04  | 0.94  | 0.80  | 1.20  | 2.51  | 0.56  | 0.78  | 0.78  | 0.05  |

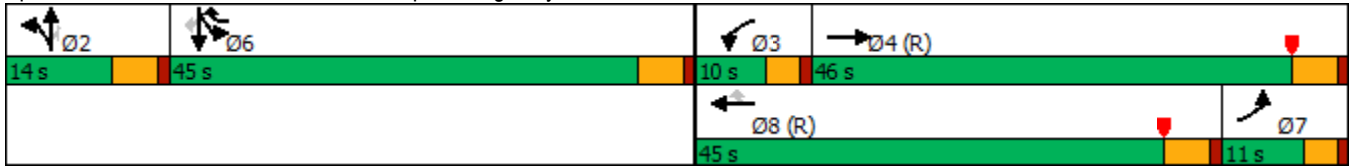
Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 115  |
| Actuated Cycle Length:             | 115  |
| Offset:                            | 0 (0%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 115  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 2.51   |
| Intersection Signal Delay:         | 150.4  |
| Intersection LOS:                  | F  |
| Intersection Capacity Utilization: | 112.6%   |
| ICU Level of Service:              | H  |
| Analysis Period (min):             | 15   |

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 22: Rose Drive & Imperial Highway



## APPENDIX G

### PROJECT DRIVEWAY LEVEL OF SERVICE CALCULATION WORKSHEETS – ICU



*APPENDIX G-1*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | E     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.984 |

**Intersection Setup**

| Name                         | Rose Drive |      |       | Rose Drive |      |       | Vesuvius Drive |      |       | Vesuvius Drive |      |       |
|------------------------------|------------|------|-------|------------|------|-------|----------------|------|-------|----------------|------|-------|
|                              | Approach   |      |       |            |      |       | Approach       |      |       |                |      |       |
|                              | Northbound |      |       | Southbound |      |       | Eastbound      |      |       | Westbound      |      |       |
| Lane Configuration           |            |      |       |            |      |       |                |      |       |                |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left           | Thru | Right | Left           | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 1     | 1          | 0    | 1     | 0              | 0    | 0     | 1              | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.           | 100. | 100.  | 100.           | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0              | 0    | 0     | 0              | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00          |      |       | 30.00          |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00           |      |       | 0.00           |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes            |      |       | Yes            |      |       |

**Volumes**

| Name                                    | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|---|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|   | Approach   |      |      |            |      |      | Approach       |      |      |                |      |      |
|   | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Base Volume Input [veh/h]               | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]             | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 3          | 202  | 4    | 2          | 374  | 3    | 2              | 0    | 10   | 9              | 0    | 3    |
| Total Analysis Volume [veh/h]           | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Signal Group            | 0   | 6   | 0   | 0   | 2   | 0   | 0   | 8   | 0   | 0   | 4   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |     |     |     |     |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.24 | 0.24 | 0.00 | 0.88 | 0.01 | 0.01 | 0.00 | 0.03 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | E     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.984 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 24: Driveway A at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.377 |

**Intersection Setup**

| Name                         | Driveway A |      |       | Driveway A |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |            |      |       |            |      |       |              |      |       |              |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 0     | 1          | 0    | 0     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name                                    | Driveway A                |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|---------------------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 90   | 0    | 5          | 22   | 0    | 33           | 11   | 864  | 40           | 2    | 126  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 90                        | 0    | 5    | 22         | 0    | 33   | 11           | 864  | 40   | 2            | 126  | 8    |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 23                        | 0    | 1    | 6          | 0    | 8    | 3            | 216  | 10   | 1            | 315  | 2    |
| Total Analysis Volume [veh/h]           | 90                        | 0    | 5    | 22         | 0    | 33   | 11           | 864  | 40   | 2            | 126  | 8    |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0          |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 0   | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.01 | 0.18 | 0.18 | 0.00 | 0.25 | 0.25 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.377 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.721 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Driveway B |      |      | Driveway B |      |      |
|------------------------------|------------|------|------|------------|------|------|------------|------|------|------------|------|------|
|                              | Approach   |      |      |            |      |      | Approach   |      |      |            |      |      |
|                              | Northbound |      |      | Southbound |      |      | Eastbound  |      |      | Westbound  |      |      |
| Lane Configuration           | ↵ ↵        |      |      | ↵ ↵        |      |      | ↵ ↵        |      |      | ↵ ↵        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1          | 0    | 0    | 1          | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00      |      |      | 30.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00       |      |      | 0.00       |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes        |      |      | Yes        |      |      |

**Volumes**

| Name                                    | Va Av      |      |      | Va Av      |      |      | Driveway B |      |      | Driveway B |      |      |
|---|------------|------|------|------------|------|------|------------|------|------|------------|------|------|
|   | Approach   |      |      |            |      |      | Approach   |      |      |            |      |      |
|   | Northbound |      |      | Southbound |      |      | Eastbound  |      |      | Westbound  |      |      |
| Base Volume Input [veh/h]               | 33         | 695  | 13   | 13         | 200  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]             | 33         | 695  | 13   | 13         | 200  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 8          | 174  | 3    | 3          | 500  | 1    | 1          | 0    | 18   | 9          | 0    | 9    |
| Total Analysis Volume [veh/h]           | 33         | 695  | 13   | 13         | 200  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0          |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0          |      |      | 0          |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Per | Per | Per | Per | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Signal Group            | 1    | 6   | 0   | 5    | 2   | 0   | 0   | 8   | 0   | 0   | 4   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |     |     |     |     |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | -   | -   | -   | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.21 | 0.21 | 0.01 | 0.59 | 0.59 | 0.00 | 0.00 | 0.04 | 0.02 | 0.00 | 0.02 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.721 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.501 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           |            |        |            |        |            |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Driveway C |        |
|---|------------|--------|------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 799        | 14     | 23         | 1400   | 41         | 66     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 799        | 14     | 23         | 1400   | 41         | 66     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 200        | 4      | 6          | 350    | 10         | 17     |
| Total Analysis Volume [veh/h]           | 799        | 14     | 23         | 1400   | 41         | 66     |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0          |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permissiv | Permissiv | Permissiv | Permissiv | Split | Split |
|-------------------------|-----------|-----------|-----------|-----------|-------|-------|
| Signal Group            | 6         | 0         | 0         | 2         | 7     | 0     |
| Auxiliary Signal Groups |           |           |           |           |       |       |
| Lead / Lag              | -         | -         | -         | -         | Lead  | -     |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.24  | 0.24 | 0.01 | 0.41 | 0.02 | 0.04 |
| Intersection LOS        | A     |      |      |      |      |      |
| Intersection V/C        | 0.501 |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | D     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.867 |

**Intersection Setup**

| Name                         | Rose Drive |      |       | Rose Drive |      |       | Vesuvius Drive |      |       | Vesuvius Drive |      |       |
|------------------------------|------------|------|-------|------------|------|-------|----------------|------|-------|----------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound      |      |       | Westbound      |      |       |
| Lane Configuration           |            |      |       |            |      |       |                |      |       |                |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left           | Thru | Right | Left           | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 1     | 1          | 0    | 1     | 0              | 0    | 0     | 1              | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.           | 100. | 100.  | 100.           | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0              | 0    | 0     | 0              | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00          |      |       | 30.00          |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00           |      |       | 0.00           |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes            |      |       | Yes            |      |       |

**Volumes**

| Name                                    | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|---|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Base Volume Input [veh/h]               | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]             | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 8          | 321  | 8    | 3          | 326  | 4    | 2              | 0    | 5    | 7              | 0    | 3    |
| Total Analysis Volume [veh/h]           | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Signal Group            | 0   | 6   | 0   | 0   | 2   | 0   | 0   | 8   | 0   | 0   | 4   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |     |     |     |     |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.39 | 0.39 | 0.01 | 0.77 | 0.01 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | D     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.867 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 24: Driveway A at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.427 |

**Intersection Setup**

| Name                         | Driveway A |      |       | Driveway A |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |            |      |       |            |      |       |              |      |       |              |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 0     | 1          | 0    | 0     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name                                    | Driveway A                |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|---------------------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|   | Base Volume Input [veh/h] | 77   | 0    | 4          | 15   | 0    | 22           | 37   | 150  | 109          | 5    | 767  |
| Base Volume Adjustment Factor           | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00                      | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0                         | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 77                        | 0    | 4    | 15         | 0    | 22   | 37           | 150  | 109  | 5            | 767  | 25   |
| Peak Hour Factor                        | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00                      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 19                        | 0    | 1    | 4          | 0    | 6    | 9            | 375  | 27   | 1            | 192  | 6    |
| Total Analysis Volume [veh/h]           | 77                        | 0    | 4    | 15         | 0    | 22   | 37           | 150  | 109  | 5            | 767  | 25   |
| Pedestrian Volume [ped/h]               | 0                         |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0                         |      |      | 0          |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 0   | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.02 | 0.32 | 0.32 | 0.00 | 0.16 | 0.16 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.427 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.536 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Driveway B |      |      | Driveway B |      |      |
|------------------------------|------------|------|------|------------|------|------|------------|------|------|------------|------|------|
|                              | Approach   |      |      |            |      |      | Approach   |      |      |            |      |      |
|                              | Northbound |      |      | Southbound |      |      | Eastbound  |      |      | Westbound  |      |      |
| Lane Configuration           | ↵ ↵        |      |      | ↵ ↵        |      |      | ↵ ↵        |      |      | ↵ ↵        |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1          | 0    | 0    | 1          | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00      |      |      | 30.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00       |      |      | 0.00       |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes        |      |      | Yes        |      |      |

**Volumes**

| Name                                    | Va Av      |      |      | Va Av      |      |      | Driveway B |      |      | Driveway B |      |      |
|---|------------|------|------|------------|------|------|------------|------|------|------------|------|------|
|   | Approach   |      |      |            |      |      | Approach   |      |      |            |      |      |
|   | Northbound |      |      | Southbound |      |      | Eastbound  |      |      | Westbound  |      |      |
| Base Volume Input [veh/h]               | 77         | 137  | 41   | 41         | 833  | 6    | 4          | 0    | 56   | 24         | 0    | 24   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]             | 77         | 137  | 41   | 41         | 833  | 6    | 4          | 0    | 56   | 24         | 0    | 24   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 19         | 343  | 10   | 10         | 208  | 2    | 1          | 0    | 14   | 6          | 0    | 6    |
| Total Analysis Volume [veh/h]           | 77         | 137  | 41   | 41         | 833  | 6    | 4          | 0    | 56   | 24         | 0    | 24   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0          |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0          |      |      | 0          |      |      |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Per | Per | Per | Per | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Signal Group            | 1    | 6   | 0   | 5    | 2   | 0   | 0   | 8   | 0   | 0   | 4   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |     |     |     |     |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | -   | -   | -   | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.42 | 0.42 | 0.02 | 0.25 | 0.25 | 0.00 | 0.00 | 0.03 | 0.01 | 0.00 | 0.01 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.536 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.550 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           |            |        |            |        |            |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Driveway C |        |
|---|------------|--------|------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 1415       | 47     | 75         | 1230   | 28         | 44     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 1415       | 47     | 75         | 1230   | 28         | 44     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 354        | 12     | 19         | 308    | 7          | 11     |
| Total Analysis Volume [veh/h]           | 1415       | 47     | 75         | 1230   | 28         | 44     |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0          |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permissiv | Permissiv | Permissiv | Permissiv | Split | Split |
|-------------------------|-----------|-----------|-----------|-----------|-------|-------|
| Signal Group            | 6         | 0         | 0         | 2         | 7     | 0     |
| Auxiliary Signal Groups |           |           |           |           |       |       |
| Lead / Lag              | -         | -         | -         | -         | Lead  | -     |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.43  | 0.43 | 0.04 | 0.36 | 0.02 | 0.03 |
| Intersection LOS        | A     |      |      |      |      |      |
| Intersection V/C        | 0.550 |      |      |      |      |      |

*APPENDIX G-II*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
WITH MITIGATION TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.548 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↱         |        |        | ↵↱         |        |        | +              |        |        | ↵↱             |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 11         | 809    | 15     | 6          | 1495   | 11     | 9              | 0      | 38     | 35             | 0      | 13     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 11         | 809    | 15     | 6          | 1495   | 11     | 9              | 0      | 38     | 35             | 0      | 13     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3          | 202    | 4      | 2          | 374    | 3      | 2              | 0      | 10     | 9              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 11         | 809    | 15     | 6          | 1495   | 11     | 9              | 0      | 38     | 35             | 0      | 13     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.24 | 0.24 | 0.00 | 0.44 | 0.44 | 0.01 | 0.00 | 0.03 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.548 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.489 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↻↵        |        |        | ↵↻↵        |        |        | ⊕              |        |        | ↵↻↵            |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 30         | 1283   | 33     | 13         | 1304   | 17     | 8              | 0      | 21     | 26             | 0      | 10     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 30         | 1283   | 33     | 13         | 1304   | 17     | 8              | 0      | 21     | 26             | 0      | 10     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8          | 321    | 8      | 3          | 326    | 4      | 2              | 0      | 5      | 7              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 30         | 1283   | 33     | 13         | 1304   | 17     | 8              | 0      | 21     | 26             | 0      | 10     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.39 | 0.39 | 0.01 | 0.39 | 0.39 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.489 |      |      |      |      |      |      |      |      |      |      |      |

*APPENDIX G-III*

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.144 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↻↵        |        |        | ↵↻↵        |        |        | ⊕              |        |        | ↵↻↵            |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 14         | 207    | 4      | 2          | 376    | 17     | 15             | 0      | 52     | 9              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.25 | 0.25 | 0.00 | 0.88 | 0.04 | 0.04 | 0.00 | 0.16 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.144 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 24: Driveway A at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.389 |

**Intersection Setup**

| Name                         | Driveway A |        |        | Driveway A |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵         |        |        | ↵↵         |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 0      | 1          | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name                                    | Driveway A |        |        | Driveway A |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------|--------|--------|------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 90         | 0      | 5      | 22         | 0      | 33     | 11           | 908    | 40     | 2            | 1321   | 8      |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 90         | 0      | 5      | 22         | 0      | 33     | 11           | 908    | 40     | 2            | 1321   | 8      |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 23         | 0      | 1      | 6          | 0      | 8      | 3            | 227    | 10     | 1            | 330    | 2      |
| Total Analysis Volume [veh/h]           | 90         | 0      | 5      | 22         | 0      | 33     | 11           | 908    | 40     | 2            | 1321   | 8      |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.00 | 0.00 | 0.01 | 0.00 | 0.02 | 0.01 | 0.19 | 0.19 | 0.00 | 0.26 | 0.26 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.389 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.750 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound  |        |        | Westbound  |        |        |
| Lane Configuration           | ↵↵↵             |        |        | ↵↵↵             |        |        | ↵↵         |        |        | ↵↵         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left       | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1          | 0      | 0      | 1          | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 30.00           |        |        | 30.00           |        |        | 30.00      |        |        | 30.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00       |        |        | 0.00       |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes        |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 33              | 727    | 13     | 13              | 2099   | 2      | 3          | 0      | 71     | 36         | 0      | 36     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 33              | 727    | 13     | 13              | 2099   | 2      | 3          | 0      | 71     | 36         | 0      | 36     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8               | 182    | 3      | 3               | 525    | 1      | 1          | 0      | 18     | 9          | 0      | 9      |
| Total Analysis Volume [veh/h]           | 33              | 727    | 13     | 13              | 2099   | 2      | 3          | 0      | 71     | 36         | 0      | 36     |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]             | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|----------|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 1        | 6       | 0       | 5        | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |          |         |         |          |         |         |         |         |         |         |         |         |
| Lead / Lag              | Lead     | -       | -       | Lead     | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.22 | 0.22 | 0.01 | 0.62 | 0.62 | 0.00 | 0.00 | 0.04 | 0.02 | 0.00 | 0.02 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.750 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.502 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           | ↑↑         |        | ↩↑↑        |        | ↩↩         |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Driveway C |        |
|---|------------|--------|------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 818        | 14     | 23         | 1406   | 41         | 66     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 818        | 14     | 23         | 1406   | 41         | 66     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 205        | 4      | 6          | 352    | 10         | 17     |
| Total Analysis Volume [veh/h]           | 818        | 14     | 23         | 1406   | 41         | 66     |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0          |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permissive | Permissive | Permissive | Permissive | Split | Split |
|-------------------------|------------|------------|------------|------------|-------|-------|
| Signal Group            | 6          | 0          | 0          | 2          | 7     | 0     |
| Auxiliary Signal Groups |            |            |            |            |       |       |
| Lead / Lag              | -          | -          | -          | -          | Lead  | -     |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.24  | 0.24 | 0.01 | 0.41 | 0.02 | 0.04 |
| Intersection LOS        | A     |      |      |      |      |      |
| Intersection V/C        | 0.502 |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | F     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.043 |

**Intersection Setup**

| Name                         | Rose Drive |      |       | Rose Drive |      |       | Vesuvius Drive |      |       | Vesuvius Drive |      |       |
|------------------------------|------------|------|-------|------------|------|-------|----------------|------|-------|----------------|------|-------|
|                              | Northbound |      |       | Southbound |      |       | Eastbound      |      |       | Westbound      |      |       |
| Lane Configuration           |            |      |       |            |      |       |                |      |       |                |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left           | Thru | Right | Left           | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  | 12.0           | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 0          | 0    | 1     | 1          | 0    | 1     | 0              | 0    | 0     | 1              | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.           | 100. | 100.  | 100.           | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0              | 0    | 0     | 0              | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  | 0.00           | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00          |      |       | 30.00          |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00           |      |       | 0.00           |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes            |      |       | Yes            |      |       |

**Volumes**

| Name                                    | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|---|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Base Volume Input [veh/h]               | 169        | 127  | 33   | 13         | 132  | 101  | 49             | 0    | 118  | 26             | 0    | 10   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]             | 169        | 127  | 33   | 13         | 132  | 101  | 49             | 0    | 118  | 26             | 0    | 10   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 42         | 318  | 8    | 3          | 332  | 25   | 12             | 0    | 30   | 7              | 0    | 3    |
| Total Analysis Volume [veh/h]           | 169        | 127  | 33   | 13         | 132  | 101  | 49             | 0    | 118  | 26             | 0    | 10   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |



Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Signal Group            | 0   | 6   | 0   | 0   | 2   | 0   | 0   | 8   | 0   | 0   | 4   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |     |     |     |     |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.38 | 0.38 | 0.01 | 0.78 | 0.06 | 0.03 | 0.00 | 0.10 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | F     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 1.043 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 24: Driveway A at Lambert Road**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.441 |

**Intersection Setup**

| Name                         | Driveway A |      |       | Driveway A |      |       | Lambert Road |      |       | Lambert Road |      |       |
|------------------------------|------------|------|-------|------------|------|-------|--------------|------|-------|--------------|------|-------|
|                              | Approach   |      |       |            |      |       | Approach     |      |       |              |      |       |
|                              | Northbound |      |       | Southbound |      |       | Eastbound    |      |       | Westbound    |      |       |
| Lane Configuration           |            |      |       |            |      |       |              |      |       |              |      |       |
| Turning Movement             | Left       | Thru | Right | Left       | Thru | Right | Left         | Thru | Right | Left         | Thru | Right |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0  | 12.0       | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  | 12.0         | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1          | 0    | 0     | 1          | 0    | 0     | 1            | 0    | 0     | 1            | 0    | 0     |
| Entry Pocket Length [ft]     | 100.       | 100. | 100.  | 100.       | 100. | 100.  | 100.         | 100. | 100.  | 100.         | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0     | 0          | 0    | 0     | 0            | 0    | 0     | 0            | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00  | 0.00       | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  | 0.00         | 0.00 | 0.00  |
| Speed [mph]                  | 30.00      |      |       | 30.00      |      |       | 30.00        |      |       | 30.00        |      |       |
| Grade [%]                    | 0.00       |      |       | 0.00       |      |       | 0.00         |      |       | 0.00         |      |       |
| Crosswalk                    | Yes        |      |       | Yes        |      |       | Yes          |      |       | Yes          |      |       |

**Volumes**

| Name                                    | Driveway A |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|---|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|   | Approach   |      |      |            |      |      | Approach     |      |      |              |      |      |
|   | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Base Volume Input [veh/h]               | 77         | 0    | 4    | 15         | 0    | 22   | 37           | 157  | 109  | 5            | 804  | 25   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]             | 77         | 0    | 4    | 15         | 0    | 22   | 37           | 157  | 109  | 5            | 804  | 25   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 19         | 0    | 1    | 4          | 0    | 6    | 9            | 393  | 27   | 1            | 201  | 6    |
| Total Analysis Volume [veh/h]           | 77         | 0    | 4    | 15         | 0    | 22   | 37           | 157  | 109  | 5            | 804  | 25   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Per | Per | Per | Per | Per | Per | Prot | Per | Per | Prot | Per | Per |
|-------------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|------|-----|-----|
| Signal Group            | 0   | 8   | 0   | 0   | 4   | 0   | 5    | 2   | 0   | 1    | 6   | 0   |
| Auxiliary Signal Groups |     |     |     |     |     |     |      |     |     |      |     |     |
| Lead / Lag              | -   | -   | -   | -   | -   | -   | Lea  | -   | -   | Lea  | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.02 | 0.33 | 0.33 | 0.00 | 0.16 | 0.16 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.441 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.556 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Driveway B |      |      | Driveway B |      |      |
|------------------------------|------------|------|------|------------|------|------|------------|------|------|------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound  |      |      | Westbound  |      |      |
| Approach                     |            |      |      |            |      |      |            |      |      |            |      |      |
| Lane Configuration           | ↵↵↵        |      |      | ↵↵↵        |      |      | ↵↵         |      |      | ↵↵         |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1          | 0    | 0    | 1          | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00      |      |      | 30.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00       |      |      | 0.00       |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes        |      |      | Yes        |      |      |

**Volumes**

| Name                                    | Va Av      |      |      | Va Av      |      |      | Driveway B |      |      | Driveway B |      |      |
|---|------------|------|------|------------|------|------|------------|------|------|------------|------|------|
|   | Northbound |      |      | Southbound |      |      | Eastbound  |      |      | Westbound  |      |      |
| Base Volume Input [veh/h]               | 77         | 143  | 41   | 41         | 873  | 6    | 4          | 0    | 56   | 24         | 0    | 24   |
| Base Volume Adjustment Factor           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor                           | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]               | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]            | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]                  | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]                   | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h] | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]                    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]             | 77         | 143  | 41   | 41         | 873  | 6    | 4          | 0    | 56   | 24         | 0    | 24   |
| Peak Hour Factor                        | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor                 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]          | 19         | 359  | 10   | 10         | 218  | 2    | 1          | 0    | 14   | 6          | 0    | 6    |
| Total Analysis Volume [veh/h]           | 77         | 143  | 41   | 41         | 873  | 6    | 4          | 0    | 56   | 24         | 0    | 24   |
| Pedestrian Volume [ped/h]               | 0          |      |      | 0          |      |      | 0          |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]             | 0          |      |      | 0          |      |      | 0          |      |      | 0          |      |      |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Prot | Per | Per | Prot | Per | Per | Per | Per | Per | Per | Per | Per |
|-------------------------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| Signal Group            | 1    | 6   | 0   | 5    | 2   | 0   | 0   | 8   | 0   | 0   | 4   | 0   |
| Auxiliary Signal Groups |      |     |     |      |     |     |     |     |     |     |     |     |
| Lead / Lag              | Lea  | -   | -   | Lea  | -   | -   | -   | -   | -   | -   | -   | -   |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.43 | 0.43 | 0.02 | 0.26 | 0.26 | 0.00 | 0.00 | 0.03 | 0.01 | 0.00 | 0.01 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.556 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.549 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           |            |        |            |        |            |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 30.00      |        | 30.00      |        | 30.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name                                    | Rose Drive |        | Rose Drive |        | Driveway C |        |
|---|------------|--------|------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 1412       | 47     | 75         | 1250   | 28         | 44     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 1412       | 47     | 75         | 1250   | 28         | 44     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 353        | 12     | 19         | 313    | 7          | 11     |
| Total Analysis Volume [veh/h]           | 1412       | 47     | 75         | 1250   | 28         | 44     |
| Pedestrian Volume [ped/h]               | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]             | 0          |        | 0          |        | 0          |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permissiv | Permissiv | Permissiv | Permissiv | Split | Split |
|-------------------------|-----------|-----------|-----------|-----------|-------|-------|
| Signal Group            | 6         | 0         | 0         | 2         | 7     | 0     |
| Auxiliary Signal Groups |           |           |           |           |       |       |
| Lead / Lag              | -         | -         | -         | -         | Lead  | -     |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.43  | 0.43 | 0.04 | 0.37 | 0.02 | 0.03 |
| Intersection LOS        | A     |      |      |      |      |      |
| Intersection V/C        | 0.549 |      |      |      |      |      |

*APPENDIX G-IV*

**YEAR 2045 PLUS PROJECT WITH MITIGATION  
TRAFFIC CONDITIONS**



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.722 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↵↵        |        |        | ↵↵↵        |        |        | ⊕              |        |        | ↵↵             |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 14         | 207    | 4      | 2          | 376    | 17     | 15             | 0      | 52     | 9              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 54         | 828    | 15     | 6          | 1503   | 67     | 61             | 0      | 207    | 35             | 0      | 13     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.25 | 0.25 | 0.00 | 0.46 | 0.46 | 0.04 | 0.00 | 0.16 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | C     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.722 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.683 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           | ↵↱         |        |        | ↵↱         |        |        | +              |        |        | ↵↱             |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name                                    | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Base Volume Input [veh/h]               | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]             | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Peak Hour Factor                        | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 42         | 318    | 8      | 3          | 332    | 25     | 12             | 0      | 30     | 7              | 0      | 3      |
| Total Analysis Volume [veh/h]           | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]             | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group            | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.10  | 0.38 | 0.38 | 0.01 | 0.42 | 0.42 | 0.03 | 0.00 | 0.10 | 0.02 | 0.00 | 0.01 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.683 |      |      |      |      |      |      |      |      |      |      |      |

## APPENDIX H

### PROJECT DRIVEWAY LEVEL OF SERVICE CALCULATION WORKSHEETS – HCM

*APPENDIX H-1*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 9.0   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.871 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Lane Configuration           |            |      |      |            |      |      |                |      |      |                |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left           | Thru | Righ | Left           | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0          | 0    | 1    | 1          | 0    | 1    | 0              | 0    | 0    | 1              | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.           | 100. | 100. | 100.           | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00          |      |      | 30.00          |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00           |      |      | 0.00           |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No             |      |      | No             |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes            |      |      | Yes            |      |      |

**Volumes**

| Name   | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|--|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|  |            |      |      |            |      |      |                |      |      |                |      |      |
| Base Volume Input [veh/h]                                      | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 3          | 202  | 4    | 2          | 374  | 3    | 2              | 0    | 10   | 9              | 0    | 3    |
| Total Analysis Volume [veh/h]                                  | 11         | 809  | 15   | 6          | 149  | 11   | 9              | 0    | 38   | 35             | 0    | 13   |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No             |      | No   | No             |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 6    | 0    | 0    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 91   | 0    | 0    | 91   | 0    | 0    | 29   | 0    | 0    | 29   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 7    | 0    | 0    | 14   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 107  | 107  | 107  | 107  | 107  | 107  | 5     | 5     | 5     |
| g / C, Green / Cycle                    | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.04  | 0.04  | 0.04  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01 | 0.22 | 0.22 | 0.00 | 0.79 | 0.01 | 0.03  | 0.02  | 0.01  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 180  | 1800  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 901  | 169  | 169  | 157  | 169  | 160  | 108   | 62    | 76    |
| d1, Uniform Delay [s]                   | 0.69 | 0.88 | 0.87 | 0.69 | 3.22 | 0.69 | 56.70 | 56.32 | 55.60 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.02 | 0.34 | 0.34 | 0.00 | 6.96 | 0.01 | 2.73  | 7.70  | 1.04  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |       |       |       |
|---------------------------------------|------|------|------|------|------|------|-------|-------|-------|
| X, volume / capacity                  | 0.01 | 0.24 | 0.24 | 0.00 | 0.88 | 0.01 | 0.43  | 0.56  | 0.17  |
| d, Delay for Lane Group [s/veh]       | 0.71 | 1.22 | 1.21 | 0.69 | 10.1 | 0.70 | 59.43 | 64.01 | 56.64 |
| Lane Group LOS                        | A    | A    | A    | A    | B    | A    | E     | E     | E     |
| Critical Lane Group                   | No   | No   | No   | No   | Yes  | No   | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.01 | 0.52 | 0.51 | 0.01 | 8.00 | 0.01 | 1.49  | 1.17  | 0.40  |
| 50th-Percentile Queue Length [ft/ln]  | 0.34 | 12.9 | 12.8 | 0.15 | 199. | 0.27 | 37.16 | 29.30 | 10.07 |
| 95th-Percentile Queue Length [veh/ln] | 0.02 | 0.93 | 0.92 | 0.01 | 12.6 | 0.02 | 2.68  | 2.11  | 0.73  |
| 95th-Percentile Queue Length [ft/ln]  | 0.61 | 23.2 | 23.0 | 0.27 | 315. | 0.49 | 66.89 | 52.74 | 18.13 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|-------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 0.71  | 1.22 | 1.21  | 0.69 | 10.1  | 0.70 | 59.4  | 59.4 | 59.4 | 64.0 | 56.6 | 56.6 |
| Movement LOS                    | A     | A    | A     | A    | B     | A    | E     | E    | E    | E    | E    | E    |
| d_A, Approach Delay [s/veh]     | 1.21  |      | 10.07 |      | 59.43 |      | 62.02 |      |      |      |      |      |
| Approach LOS                    | A     |      | B     |      | E     |      | E     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 9.01  |      |       |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | A     |      |       |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.871 |      |       |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.48 | 49.48 | 49.48 | 49.48 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.780 | 2.783 | 1.778 | 1.985 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1451  | 1451  | 417   | 417   |
| d_b, Bicycle Delay [s]                                     | 4.53  | 4.53  | 37.58 | 37.58 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.248 | 4.054 | 1.637 | 1.639 |
| Bicycle LOS  | B     | D     | A     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 24: Driveway A at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.329 |

**Intersection Setup**

| Name                         | Driveway A |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           |            |      |      |            |      |      |              |      |      |              |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | Driveway A |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|  |            |      |      |            |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 90         | 0    | 5    | 22         | 0    | 33   | 11           | 864  | 40   | 2            | 126  | 8    |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 90         | 0    | 5    | 22         | 0    | 33   | 11           | 864  | 40   | 2            | 126  | 8    |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 23         | 0    | 1    | 6          | 0    | 8    | 3            | 216  | 10   | 1            | 315  | 2    |
| Total Analysis Volume [veh/h]                                  | 90         | 0    | 5    | 22         | 0    | 33   | 11           | 864  | 40   | 2            | 126  | 8    |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 58   | 0    | 0    | 58   | 0    | 10   | 22   | 0    | 10   | 22   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 24   | 0    | 0    | 24   | 0    | 0    | 11   | 0    | 0    | 11   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90   | 90   | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6     | 6     | 6     | 6     | 2    | 72   | 72   | 0    | 71   | 71   |
| g / C, Green / Cycle                    | 0.07  | 0.07  | 0.07  | 0.07  | 0.02 | 0.80 | 0.80 | 0.00 | 0.78 | 0.78 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05  | 0.00  | 0.01  | 0.02  | 0.01 | 0.16 | 0.16 | 0.00 | 0.22 | 0.23 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 180  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 137   | 127   | 162   | 127   | 31   | 302  | 151  | 8    | 297  | 148  |
| d1, Uniform Delay [s]                   | 41.26 | 39.30 | 39.68 | 39.89 | 43.7 | 2.24 | 2.25 | 44.6 | 2.73 | 2.77 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.21  | 0.12  | 0.38  | 1.07  | 6.66 | 0.15 | 0.30 | 14.7 | 0.24 | 0.50 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.66  | 0.04  | 0.14  | 0.26  | 0.35 | 0.20 | 0.20 | 0.24 | 0.28 | 0.29 |
| d, Delay for Lane Group [s/veh]       | 46.46 | 39.42 | 40.06 | 40.95 | 50.4 | 2.39 | 2.56 | 59.3 | 2.96 | 3.27 |
| Lane Group LOS                        | D     | D     | D     | D     | D    | A    | A    | E    | A    | A    |
| Critical Lane Group                   | Yes   | No    | No    | No    | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 2.14  | 0.11  | 0.47  | 0.72  | 0.30 | 0.84 | 0.94 | 0.08 | 1.45 | 1.64 |
| 50th-Percentile Queue Length [ft/ln]  | 53.42 | 2.67  | 11.82 | 18.12 | 7.45 | 21.1 | 23.4 | 1.94 | 36.1 | 40.9 |
| 95th-Percentile Queue Length [veh/ln] | 3.85  | 0.19  | 0.85  | 1.30  | 0.54 | 1.52 | 1.69 | 0.14 | 2.60 | 2.95 |
| 95th-Percentile Queue Length [ft/ln]  | 96.16 | 4.81  | 21.27 | 32.61 | 13.4 | 37.9 | 42.2 | 3.49 | 65.0 | 73.6 |

**Movement, Approach, & Intersection Results**

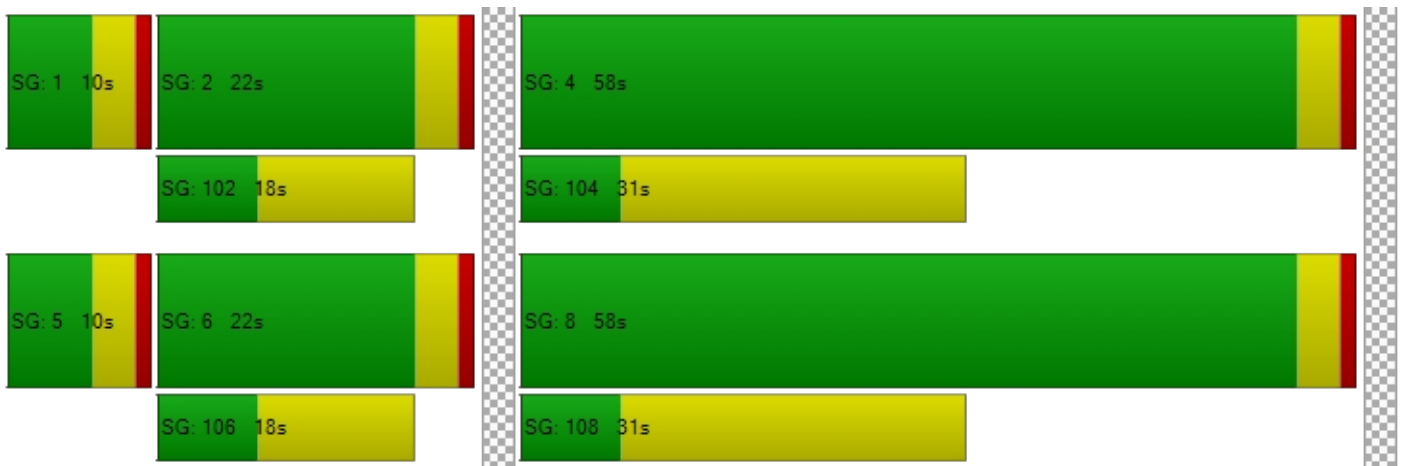
|                                 |       |      |      |       |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 46.4  | 39.4 | 39.4 | 40.0  | 40.9 | 40.9 | 50.4 | 2.44 | 2.56 | 59.3 | 3.07 | 3.27 |
| Movement LOS                    | D     | D    | D    | D     | D    | D    | D    | A    | A    | E    | A    | A    |
| d_A, Approach Delay [s/veh]     | 46.09 |      |      | 40.59 |      |      | 3.02 |      | 3.16 |      |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | A    |      | A    |      |      |      |
| d_I, Intersection Delay [s/veh] | 5.73  |      |      |       |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |      |       |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.329 |      |      |       |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.68 | 34.68 | 34.68 | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.984 | 1.964 | 3.042 | 2.926 |
| Crosswalk LOS  | A     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1200  | 1200  | 400   | 400   |
| d_b, Bicycle Delay [s]                                     | 7.21  | 7.21  | 28.81 | 28.81 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.716 | 1.650 | 2.063 | 2.258 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |









**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 9.0   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.667 |

**Intersection Setup**

| Name                         | Va Av  |      |      | Va Av   |      |      | Driveway B  |      |      | Driveway B  |      |      |
|------------------------------|--|------|------|---|------|------|---|------|------|---|------|------|
|                              | Northbound   |      |      | Southbound  |      |      | Eastbound   |      |      | Westbound   |      |      |
| Approach                     | Northbound   |      |      | Southbound  |      |      | Eastbound   |      |      | Westbound   |      |      |
| Lane Configuration           |  |      |      |  |      |      |  |      |      |  |      |      |
| Turning Movement             | Left   | Thru | Righ | Left  | Thru | Righ | Left  | Thru | Righ | Left  | Thru | Righ |
| Lane Width [ft]              | 12.0   | 12.0 | 12.0 | 12.0  | 12.0 | 12.0 | 12.0  | 12.0 | 12.0 | 12.0  | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1  | 0    | 0    | 1   | 0    | 0    | 1   | 0    | 0    | 1   | 0    | 0    |
| Entry Pocket Length [ft]     | 100.   | 100. | 100. | 100.  | 100. | 100. | 100.  | 100. | 100. | 100.  | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0  | 0    | 0    | 0   | 0    | 0    | 0   | 0    | 0    | 0   | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00   | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Speed [mph]                  | 45.00  |      |      | 45.00   |      |      | 25.00   |      |      | 25.00   |      |      |
| Grade [%]                    | 0.00   |      |      | 0.00  |      |      | 0.00  |      |      | 0.00  |      |      |
| Curb Present                 | No   |      |      | No  |      |      | No  |      |      | No  |      |      |
| Crosswalk                    | Yes  |      |      | Yes   |      |      | Yes   |      |      | Yes   |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Driveway B |      |      | Driveway B |      |      |
|--|-------|------|------|-------|------|------|------------|------|------|------------|------|------|
|  |       |      |      |       |      |      |            |      |      |            |      |      |
| Base Volume Input [veh/h]                                      | 33    | 695  | 13   | 13    | 200  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 33    | 695  | 13   | 13    | 200  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 8     | 174  | 3    | 3     | 500  | 1    | 1          | 0    | 18   | 9          | 0    | 9    |
| Total Analysis Volume [veh/h]                                  | 33    | 695  | 13   | 13    | 200  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No         |      | No   | No         |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 1    | 6    | 0    | 5    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 56   | 0    | 10   | 56   | 0    | 0    | 29   | 0    | 0    | 29   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 11   | 0    | 0    | 18   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L     | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 95   | 95   | 95   | 95   | 95   | 95   | 95    | 95    | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00  | 0.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4    | 76   | 76   | 2    | 74   | 74   | 5     | 5     | 5     | 5     |
| g / C, Green / Cycle                    | 0.04 | 0.80 | 0.80 | 0.02 | 0.78 | 0.78 | 0.05  | 0.05  | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.19 | 0.19 | 0.01 | 0.53 | 0.53 | 0.00  | 0.04  | 0.02  | 0.02  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 1800  | 1900  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 68   | 151  | 151  | 35   | 148  | 148  | 111   | 105   | 82    | 105   |
| d1, Uniform Delay [s]                   | 44.8 | 2.36 | 2.36 | 46.0 | 4.83 | 4.83 | 42.48 | 44.06 | 43.28 | 43.23 |
| k, delay calibration                    | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.25 | 0.36 | 0.36 | 6.35 | 2.48 | 2.48 | 0.10  | 7.38  | 3.71  | 1.92  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |       |       |       |       |
|---------------------------------------|------|------|------|------|------|------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.48 | 0.23 | 0.23 | 0.37 | 0.67 | 0.67 | 0.03  | 0.68  | 0.44  | 0.34  |
| d, Delay for Lane Group [s/veh]       | 50.0 | 2.72 | 2.72 | 52.3 | 7.31 | 7.31 | 42.58 | 51.43 | 46.99 | 45.15 |
| Lane Group LOS                        | D    | A    | A    | D    | A    | A    | D     | D     | D     | D     |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No    | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.83 | 0.90 | 0.89 | 0.35 | 5.67 | 5.67 | 0.07  | 1.86  | 0.90  | 0.87  |
| 50th-Percentile Queue Length [ft/ln]  | 20.8 | 22.5 | 22.3 | 8.86 | 141. | 141. | 1.75  | 46.48 | 22.57 | 21.85 |
| 95th-Percentile Queue Length [veh/ln] | 1.50 | 1.62 | 1.61 | 0.64 | 9.57 | 9.57 | 0.13  | 3.35  | 1.63  | 1.57  |
| 95th-Percentile Queue Length [ft/ln]  | 37.5 | 40.5 | 40.2 | 15.9 | 239. | 239. | 3.15  | 83.66 | 40.63 | 39.33 |

**Movement, Approach, & Intersection Results**

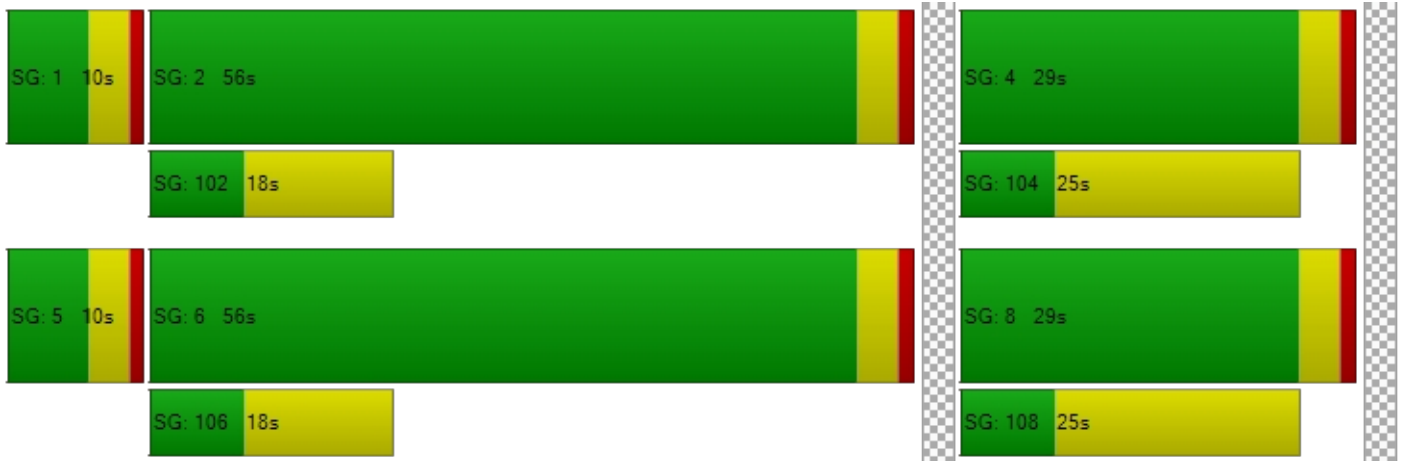
|                                 |       |      |      |      |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 50.0  | 2.72 | 2.72 | 52.3 | 7.31 | 7.31 | 42.5  | 51.4 | 51.4 | 46.9  | 45.1 | 45.1 |
| Movement LOS                    | D     | A    | A    | D    | A    | A    | D     | D    | D    | D     | D    | D    |
| d_A, Approach Delay [s/veh]     | 4.83  |      |      | 7.60 |      |      | 51.07 |      |      | 46.07 |      |      |
| Approach LOS                    | A     |      |      | A    |      |      | D     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 8.96  |      |      |      |      |      |       |      |      |       |      |      |
| Intersection LOS                | A     |      |      |      |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.667 |      |      |      |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 37.14 | 37.14 | 37.14 | 37.14 |
| I_p,int, Pedestrian LOS Score for Intersection             | 3.186 | 3.110 | 1.972 | 1.969 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1095  | 1095  | 526   | 526   |
| d_b, Bicycle Delay [s]                                     | 9.74  | 9.74  | 25.80 | 25.80 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.171 | 3.222 | 1.682 | 1.678 |
| Bicycle LOS  | B     | C     | A     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 3.8   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.443 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           | T          |        | T          |        | T T        |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 40.00      |        | 40.00      |        | 25.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Curb Present                 | No         |        | No         |        | No         |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name   | Rose Drive |        | Rose Drive |        | Driveway C |        |
|--|------------|--------|------------|--------|------------|--------|
|  |            |        |            |        |            |        |
| Base Volume Input [veh/h]                                      | 799        | 14     | 23         | 1400   | 41         | 66     |
| Base Volume Adjustment Factor                                  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                                      | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]   | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]  | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]   | 0          | 0      | 0          | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]                               | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                                    | 799        | 14     | 23         | 1400   | 41         | 66     |
| Peak Hour Factor   | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]                                 | 200        | 4      | 6          | 350    | 10         | 17     |
| Total Analysis Volume [veh/h]                                  | 799        | 14     | 23         | 1400   | 41         | 66     |
| Presence of On-Street Parking                                  | No         | No     | No         | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0      | 0          | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                                   | 0          | 0      | 0          | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |        | 0          |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |        | 0          |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |        | 0          |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |        | 0          |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]                                    | 0          |        | 0          |        | 0          |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissiv | Permissiv | Permissiv | Permissiv | Split | Split |
|------------------------------|-----------|-----------|-----------|-----------|-------|-------|
| Signal Group                 | 6         | 0         | 0         | 2         | 7     | 0     |
| Auxiliary Signal Groups      |           |           |           |           |       |       |
| Lead / Lag                   | -         | -         | -         | -         | Lead  | -     |
| Minimum Green [s]            | 6         | 0         | 0         | 6         | 6     | 0     |
| Maximum Green [s]            | 30        | 0         | 0         | 30        | 30    | 0     |
| Amber [s]                    | 3.0       | 0.0       | 0.0       | 3.0       | 3.0   | 0.0   |
| All red [s]                  | 1.0       | 0.0       | 0.0       | 1.0       | 1.0   | 0.0   |
| Split [s]                    | 61        | 0         | 0         | 61        | 29    | 0     |
| Vehicle Extension [s]        | 3.0       | 0.0       | 0.0       | 3.0       | 3.0   | 0.0   |
| Walk [s]                     | 7         | 0         | 0         | 0         | 7     | 0     |
| Pedestrian Clearance [s]     | 11        | 0         | 0         | 0         | 18    | 0     |
| Delayed Vehicle Green [s]    | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| Rest In Walk                 | No        |           |           | No        | No    |       |
| I1, Start-Up Lost Time [s]   | 2.0       | 0.0       | 0.0       | 2.0       | 2.0   | 0.0   |
| I2, Clearance Lost Time [s]  | 2.0       | 0.0       | 0.0       | 2.0       | 2.0   | 0.0   |
| Minimum Recall               | No        |           |           | No        | No    |       |
| Maximum Recall               | No        |           |           | No        | No    |       |
| Pedestrian Recall            | No        |           |           | No        | No    |       |
| Detector Location [ft]       | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| Detector Length [ft]         | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| I, Upstream Filtering Factor | 1.00      | 1.00      | 1.00      | 1.00      | 1.00  | 1.00  |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | C    | C    | L    | C    | L     | R     |
|---|------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90   | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 2.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 76   | 76   | 76   | 76   | 6     | 6     |
| g / C, Green / Cycle                    | 0.85 | 0.85 | 0.85 | 0.85 | 0.06  | 0.06  |
| (v / s)_i Volume / Saturation Flow Rate | 0.21 | 0.21 | 0.01 | 0.37 | 0.02  | 0.03  |
| s, saturation flow rate [veh/h]         | 1900 | 1900 | 1800 | 3800 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 1611 | 1611 | 1476 | 3222 | 114   | 120   |
| d1, Uniform Delay [s]                   | 1.32 | 1.32 | 1.05 | 1.65 | 40.38 | 40.88 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.38 | 0.38 | 0.02 | 0.43 | 1.92  | 3.90  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |      |       |       |       |
|---------------------------------------|-------|-------|------|-------|-------|-------|
| X, volume / capacity                  | 0.25  | 0.25  | 0.02 | 0.43  | 0.36  | 0.55  |
| d, Delay for Lane Group [s/veh]       | 1.70  | 1.70  | 1.07 | 2.07  | 42.30 | 44.78 |
| Lane Group LOS                        | A     | A     | A    | A     | D     | D     |
| Critical Lane Group                   | No    | No    | No   | Yes   | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.40  | 0.40  | 0.02 | 0.69  | 0.93  | 1.55  |
| 50th-Percentile Queue Length [ft/ln]  | 10.01 | 10.01 | 0.46 | 17.22 | 23.30 | 38.74 |
| 95th-Percentile Queue Length [veh/ln] | 0.72  | 0.72  | 0.03 | 1.24  | 1.68  | 2.79  |
| 95th-Percentile Queue Length [ft/ln]  | 18.02 | 18.02 | 0.83 | 30.99 | 41.93 | 69.73 |

**Movement, Approach, & Intersection Results**

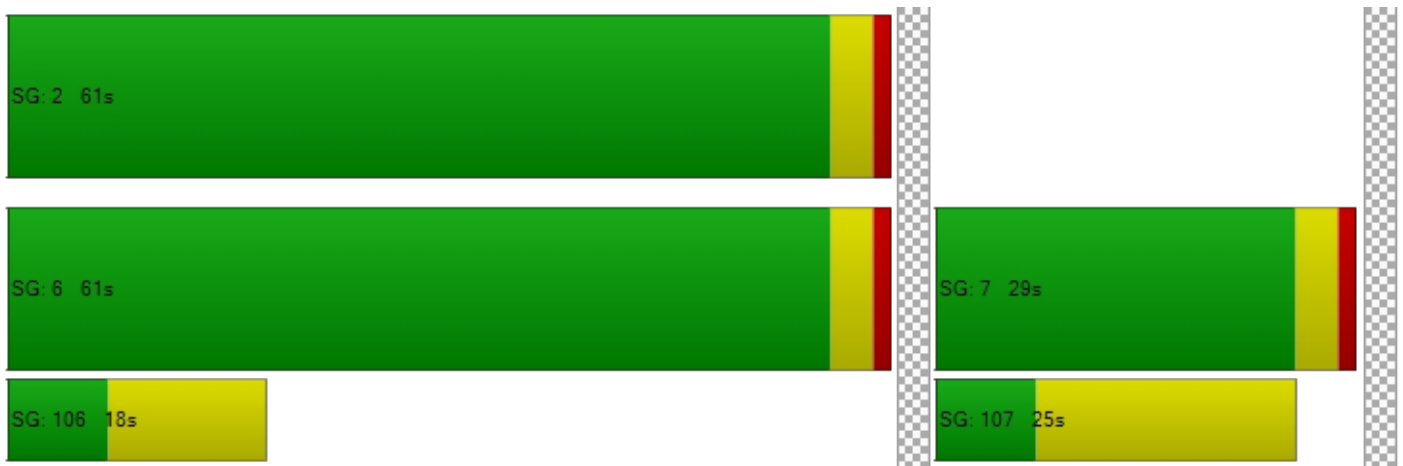
|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 1.70  | 1.70 | 1.07 | 2.07 | 42.30 | 44.78 |
| Movement LOS                    | A     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 1.70  |      | 2.06 |      | 43.83 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 3.84  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.443 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 0.0   | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 0.00  | 34.65 | 34.65 |
| I_p,int, Pedestrian LOS Score for Intersection             | 0.000 | 2.894 | 2.011 |
| Crosswalk LOS  | F     | C     | B     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1267  | 1267  | 556   |
| d_b, Bicycle Delay [s]                                     | 6.04  | 6.04  | 23.45 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.230 | 2.734 | 1.560 |
| Bicycle LOS  | B     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 4.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.753 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Lane Configuration           |            |      |      |            |      |      |                |      |      |                |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left           | Thru | Righ | Left           | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0          | 0    | 1    | 1          | 0    | 1    | 0              | 0    | 0    | 1              | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.           | 100. | 100. | 100.           | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00          |      |      | 30.00          |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00           |      |      | 0.00           |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No             |      |      | No             |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes            |      |      | Yes            |      |      |

**Volumes**

| Name   | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|--|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|  |            |      |      |            |      |      |                |      |      |                |      |      |
| Base Volume Input [veh/h]                                      | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 8          | 321  | 8    | 3          | 326  | 4    | 2              | 0    | 5    | 7              | 0    | 3    |
| Total Analysis Volume [veh/h]                                  | 30         | 128  | 33   | 13         | 130  | 17   | 8              | 0    | 21   | 26             | 0    | 10   |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No             |      | No   | No             |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 6    | 0    | 0    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 91   | 0    | 0    | 91   | 0    | 0    | 29   | 0    | 0    | 29   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 7    | 0    | 0    | 14   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 108  | 108  | 108  | 108  | 108  | 108  | 4     | 4     | 4     |
| g / C, Green / Cycle                    | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.04  | 0.04  | 0.04  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.35 | 0.35 | 0.01 | 0.69 | 0.01 | 0.02  | 0.01  | 0.01  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 180  | 1800  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 122  | 170  | 170  | 153  | 170  | 161  | 102   | 68    | 67    |
| d1, Uniform Delay [s]                   | 0.63 | 0.96 | 0.95 | 0.63 | 1.99 | 0.63 | 56.71 | 56.61 | 56.09 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.04 | 0.66 | 0.66 | 0.01 | 3.32 | 0.01 | 1.52  | 3.49  | 1.02  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |       |       |       |
|---------------------------------------|------|------|------|------|------|------|-------|-------|-------|
| X, volume / capacity                  | 0.02 | 0.39 | 0.38 | 0.01 | 0.76 | 0.01 | 0.28  | 0.38  | 0.15  |
| d, Delay for Lane Group [s/veh]       | 0.67 | 1.62 | 1.61 | 0.64 | 5.30 | 0.64 | 58.22 | 60.10 | 57.11 |
| Lane Group LOS                        | A    | A    | A    | A    | A    | A    | E     | E     | E     |
| Critical Lane Group                   | No   | No   | No   | No   | Yes  | No   | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.03 | 0.83 | 0.82 | 0.01 | 3.68 | 0.01 | 0.91  | 0.84  | 0.31  |
| 50th-Percentile Queue Length [ft/ln]  | 0.70 | 20.7 | 20.4 | 0.27 | 92.0 | 0.35 | 22.64 | 20.95 | 7.83  |
| 95th-Percentile Queue Length [veh/ln] | 0.05 | 1.49 | 1.47 | 0.02 | 6.63 | 0.03 | 1.63  | 1.51  | 0.56  |
| 95th-Percentile Queue Length [ft/ln]  | 1.26 | 37.2 | 36.8 | 0.49 | 165. | 0.63 | 40.75 | 37.71 | 14.09 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 0.67  | 1.61 | 1.61 | 0.64 | 5.30  | 0.64 | 58.2  | 58.2 | 58.2 | 60.1 | 57.1 | 57.1 |
| Movement LOS                    | A     | A    | A    | A    | A     | A    | E     | E    | E    | E    | E    | E    |
| d_A, Approach Delay [s/veh]     | 1.59  |      | 5.20 |      | 58.22 |      | 59.27 |      |      |      |      |      |
| Approach LOS                    | A     |      | A    |      | E     |      | E     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 4.70  |      |      |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | A     |      |      |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.753 |      |      |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.48 | 49.48 | 49.48 | 49.48 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.839 | 2.839 | 1.808 | 1.999 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1451  | 1451  | 417   | 417   |
| d_b, Bicycle Delay [s]                                     | 4.53  | 4.53  | 37.58 | 37.58 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.670 | 3.761 | 1.607 | 1.619 |
| Bicycle LOS  | B     | D     | A     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 24: Driveway A at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.6   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.381 |

**Intersection Setup**

| Name                         | Driveway A |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           |            |      |      |            |      |      |              |      |      |              |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |



**Volumes**

| Name   | Driveway A |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|  |            |      |      |            |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 77         | 0    | 4    | 15         | 0    | 22   | 37           | 150  | 109  | 5            | 767  | 25   |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 77         | 0    | 4    | 15         | 0    | 22   | 37           | 150  | 109  | 5            | 767  | 25   |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 19         | 0    | 1    | 4          | 0    | 6    | 9            | 375  | 27   | 1            | 192  | 6    |
| Total Analysis Volume [veh/h]                                  | 77         | 0    | 4    | 15         | 0    | 22   | 37           | 150  | 109  | 5            | 767  | 25   |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 35   | 0    | 0    | 35   | 0    | 10   | 45   | 0    | 10   | 45   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 24   | 0    | 0    | 24   | 0    | 0    | 11   | 0    | 0    | 11   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90   | 90   | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 5     | 5     | 4    | 72   | 72   | 1    | 69   | 69   |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.06  | 0.06  | 0.04 | 0.80 | 0.80 | 0.01 | 0.77 | 0.77 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.00  | 0.01  | 0.01  | 0.02 | 0.28 | 0.29 | 0.00 | 0.14 | 0.14 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 180  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 133   | 112   | 149   | 112   | 75   | 303  | 151  | 16   | 291  | 145  |
| d1, Uniform Delay [s]                   | 41.65 | 39.95 | 40.20 | 40.34 | 42.2 | 2.54 | 2.55 | 44.3 | 2.85 | 2.87 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.92  | 0.13  | 0.29  | 0.85  | 5.02 | 0.32 | 0.66 | 10.0 | 0.13 | 0.28 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.58  | 0.04  | 0.10  | 0.20  | 0.50 | 0.35 | 0.36 | 0.30 | 0.18 | 0.19 |
| d, Delay for Lane Group [s/veh]       | 45.57 | 40.08 | 40.50 | 41.18 | 47.2 | 2.86 | 3.21 | 54.3 | 2.98 | 3.15 |
| Lane Group LOS                        | D     | D     | D     | D     | D    | A    | A    | D    | A    | A    |
| Critical Lane Group                   | Yes   | No    | No    | No    | No   | No   | Yes  | Yes  | No   | No   |
| 50th-Percentile Queue Length [veh/ln] | 1.81  | 0.09  | 0.32  | 0.49  | 0.90 | 1.71 | 1.88 | 0.16 | 0.94 | 1.04 |
| 50th-Percentile Queue Length [ft/ln]  | 45.18 | 2.17  | 8.12  | 12.16 | 22.5 | 42.7 | 47.1 | 3.89 | 23.5 | 25.9 |
| 95th-Percentile Queue Length [veh/ln] | 3.25  | 0.16  | 0.58  | 0.88  | 1.62 | 3.08 | 3.39 | 0.28 | 1.69 | 1.87 |
| 95th-Percentile Queue Length [ft/ln]  | 81.32 | 3.91  | 14.61 | 21.88 | 40.5 | 76.9 | 84.8 | 7.00 | 42.3 | 46.7 |

**Movement, Approach, & Intersection Results**

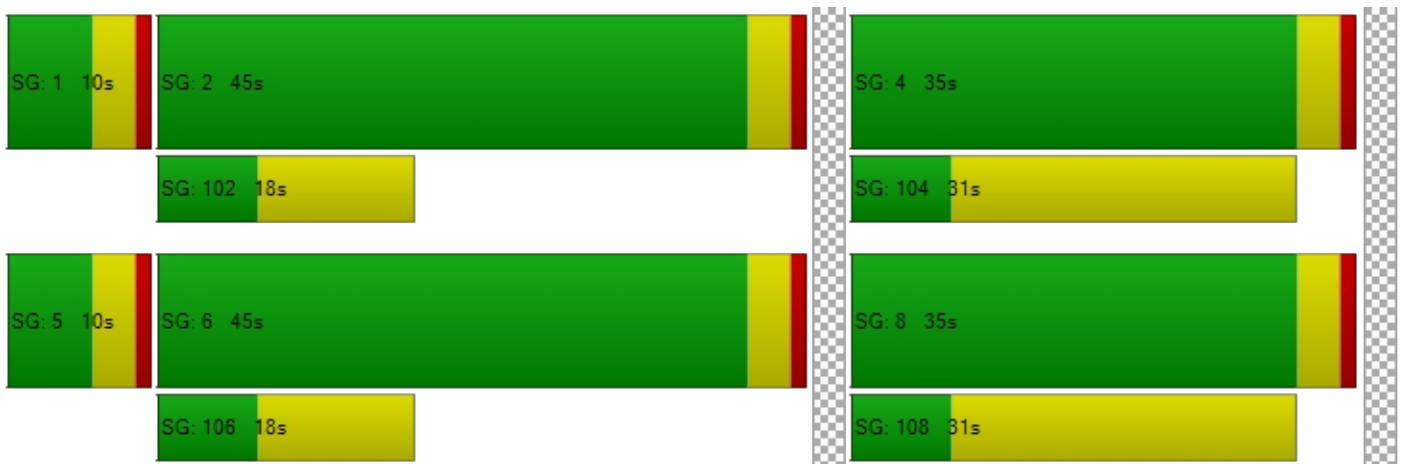
|                                 |       |      |      |       |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 45.5  | 40.0 | 40.0 | 40.5  | 41.1 | 41.1 | 47.2 | 2.96 | 3.21 | 54.3 | 3.04 | 3.15 |
| Movement LOS                    | D     | D    | D    | D     | D    | D    | D    | A    | A    | D    | A    | A    |
| d_A, Approach Delay [s/veh]     | 45.30 |      |      | 40.90 |      |      | 3.97 |      |      | 3.36 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 5.62  |      |      |       |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |      |       |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.381 |      |      |       |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.68 | 34.68 | 34.68 | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.003 | 1.972 | 3.053 | 2.937 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 689   | 689   | 911   | 911   |
| d_b, Bicycle Delay [s]                                     | 19.35 | 19.35 | 13.35 | 13.35 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.693 | 1.621 | 2.465 | 1.998 |
| Bicycle LOS  | A     | A     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 8.5   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.491 |

**Intersection Setup**

| Name                         | Va Av      |      |      | Va Av      |      |      | Driveway B |      |      | Driveway B |      |      |
|------------------------------|------------|------|------|------------|------|------|------------|------|------|------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound  |      |      | Westbound  |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound  |      |      | Westbound  |      |      |
| Lane Configuration           |            |      |      |            |      |      |            |      |      |            |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ | Left       | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1          | 0    | 0    | 1          | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.       | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 |
| Speed [mph]                  | 45.00      |      |      | 45.00      |      |      | 25.00      |      |      | 25.00      |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00       |      |      | 0.00       |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No         |      |      | No         |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes        |      |      | Yes        |      |      |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Driveway B |      |      | Driveway B |      |      |
|--|-------|------|------|-------|------|------|------------|------|------|------------|------|------|
|  |       |      |      |       |      |      |            |      |      |            |      |      |
| Base Volume Input [veh/h]                                      | 77    | 137  | 41   | 41    | 833  | 6    | 4          | 0    | 56   | 24         | 0    | 24   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 77    | 137  | 41   | 41    | 833  | 6    | 4          | 0    | 56   | 24         | 0    | 24   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 19    | 343  | 10   | 10    | 208  | 2    | 1          | 0    | 14   | 6          | 0    | 6    |
| Total Analysis Volume [veh/h]                                  | 77    | 137  | 41   | 41    | 833  | 6    | 4          | 0    | 56   | 24         | 0    | 24   |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No         |      | No   | No         |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 1    | 6    | 0    | 5    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 13   | 51   | 0    | 10   | 48   | 0    | 0    | 29   | 0    | 0    | 29   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 11   | 0    | 0    | 18   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L     | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90   | 90   | 90   | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00  | 0.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 5    | 69   | 69   | 4    | 68   | 68   | 5     | 5     | 5     | 5     |
| g / C, Green / Cycle                    | 0.06 | 0.77 | 0.77 | 0.04 | 0.76 | 0.76 | 0.05  | 0.05  | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04 | 0.37 | 0.37 | 0.02 | 0.22 | 0.22 | 0.00  | 0.03  | 0.01  | 0.01  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 1800  | 1900  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 105  | 146  | 146  | 79   | 143  | 143  | 121   | 101   | 91    | 101   |
| d1, Uniform Delay [s]                   | 41.7 | 3.80 | 3.79 | 42.1 | 3.45 | 3.45 | 40.47 | 41.61 | 40.93 | 40.90 |
| k, delay calibration                    | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.63 | 1.15 | 1.13 | 5.17 | 0.52 | 0.52 | 0.11  | 4.74  | 1.52  | 1.21  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |       |       |       |       |
|---------------------------------------|------|------|------|------|------|------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.74 | 0.48 | 0.48 | 0.52 | 0.29 | 0.29 | 0.03  | 0.56  | 0.26  | 0.24  |
| d, Delay for Lane Group [s/veh]       | 51.3 | 4.95 | 4.92 | 47.2 | 3.97 | 3.96 | 40.58 | 46.35 | 42.44 | 42.11 |
| Lane Group LOS                        | D    | A    | A    | D    | A    | A    | D     | D     | D     | D     |
| Critical Lane Group                   | No   | Yes  | No   | Yes  | No   | No   | No    | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.89 | 2.91 | 2.88 | 0.97 | 1.56 | 1.56 | 0.09  | 1.35  | 0.55  | 0.55  |
| 50th-Percentile Queue Length [ft/ln]  | 47.2 | 72.7 | 71.8 | 24.1 | 39.0 | 38.9 | 2.20  | 33.66 | 13.75 | 13.63 |
| 95th-Percentile Queue Length [veh/ln] | 3.40 | 5.24 | 5.18 | 1.74 | 2.81 | 2.80 | 0.16  | 2.42  | 0.99  | 0.98  |
| 95th-Percentile Queue Length [ft/ln]  | 85.0 | 130. | 129. | 43.5 | 70.3 | 70.1 | 3.96  | 60.59 | 24.76 | 24.53 |



**Movement, Approach, & Intersection Results**

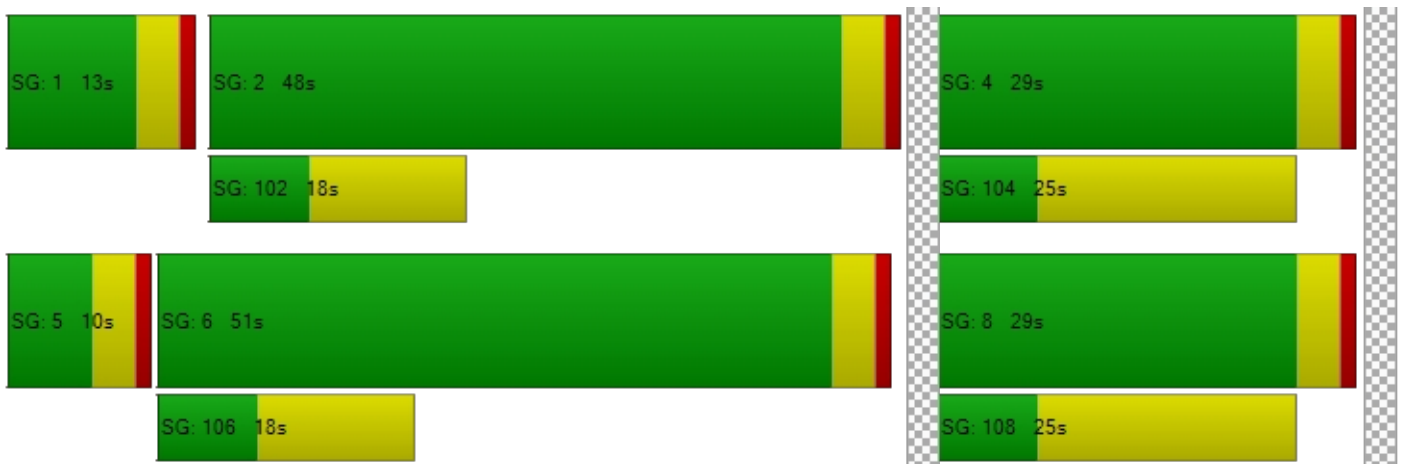
|                                 |       |      |      |      |       |      |       |      |      |      |      |      |
|---------------------------------|-------|------|------|------|-------|------|-------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 51.3  | 4.94 | 4.92 | 47.2 | 3.96  | 3.96 | 40.5  | 46.3 | 46.3 | 42.4 | 42.1 | 42.1 |
| Movement LOS                    | D     | A    | A    | D    | A     | A    | D     | D    | D    | D    | D    | D    |
| d_A, Approach Delay [s/veh]     | 7.34  |      | 5.98 |      | 45.97 |      | 42.28 |      |      |      |      |      |
| Approach LOS                    | A     |      | A    |      | D     |      | D     |      |      |      |      |      |
| d_I, Intersection Delay [s/veh] | 8.47  |      |      |      |       |      |       |      |      |      |      |      |
| Intersection LOS                | A     |      |      |      |       |      |       |      |      |      |      |      |
| Intersection V/C                | 0.491 |      |      |      |       |      |       |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.68 | 34.68 | 34.68 | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection             | 3.036 | 2.972 | 1.978 | 1.975 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1044  | 978   | 555   | 555   |
| d_b, Bicycle Delay [s]                                     | 10.28 | 11.76 | 23.48 | 23.48 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.788 | 2.286 | 1.659 | 1.639 |
| Bicycle LOS  | C     | B     | A     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 3.1   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.443 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           | T          |        | T          |        | T T        |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 40.00      |        | 40.00      |        | 25.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Curb Present                 | No         |        | No         |        | No         |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name   | Rose Drive |        | Rose Drive |        | Driveway C |        |
|--|------------|--------|------------|--------|------------|--------|
|  |            |        |            |        |            |        |
| Base Volume Input [veh/h]                                      | 1415       | 47     | 75         | 1230   | 28         | 44     |
| Base Volume Adjustment Factor                                  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                                      | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]   | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]  | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]   | 0          | 0      | 0          | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]                               | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                                    | 1415       | 47     | 75         | 1230   | 28         | 44     |
| Peak Hour Factor   | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]                                 | 354        | 12     | 19         | 308    | 7          | 11     |
| Total Analysis Volume [veh/h]                                  | 1415       | 47     | 75         | 1230   | 28         | 44     |
| Presence of On-Street Parking                                  | No         | No     | No         | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0      | 0          | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                                   | 0          | 0      | 0          | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |        | 0          |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |        | 0          |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |        | 0          |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |        | 0          |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]                                    | 0          |        | 0          |        | 0          |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissiv | Permissiv | Permissiv | Permissiv | Split | Split |
|------------------------------|-----------|-----------|-----------|-----------|-------|-------|
| Signal Group                 | 6         | 0         | 0         | 2         | 7     | 0     |
| Auxiliary Signal Groups      |           |           |           |           |       |       |
| Lead / Lag                   | -         | -         | -         | -         | Lead  | -     |
| Minimum Green [s]            | 6         | 0         | 0         | 6         | 6     | 0     |
| Maximum Green [s]            | 30        | 0         | 0         | 30        | 30    | 0     |
| Amber [s]                    | 3.0       | 0.0       | 0.0       | 3.0       | 3.0   | 0.0   |
| All red [s]                  | 1.0       | 0.0       | 0.0       | 1.0       | 1.0   | 0.0   |
| Split [s]                    | 71        | 0         | 0         | 71        | 29    | 0     |
| Vehicle Extension [s]        | 3.0       | 0.0       | 0.0       | 3.0       | 3.0   | 0.0   |
| Walk [s]                     | 7         | 0         | 0         | 0         | 7     | 0     |
| Pedestrian Clearance [s]     | 11        | 0         | 0         | 0         | 18    | 0     |
| Delayed Vehicle Green [s]    | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| Rest In Walk                 | No        |           |           | No        | No    |       |
| I1, Start-Up Lost Time [s]   | 2.0       | 0.0       | 0.0       | 2.0       | 2.0   | 0.0   |
| I2, Clearance Lost Time [s]  | 2.0       | 0.0       | 0.0       | 2.0       | 2.0   | 0.0   |
| Minimum Recall               | No        |           |           | No        | No    |       |
| Maximum Recall               | No        |           |           | No        | No    |       |
| Pedestrian Recall            | No        |           |           | No        | No    |       |
| Detector Location [ft]       | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| Detector Length [ft]         | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| I, Upstream Filtering Factor | 1.00      | 1.00      | 1.00      | 1.00      | 1.00  | 1.00  |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C    | C    | L    | C    | L     | R     |
|---|------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 100  | 100  | 100  | 100  | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 2.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 87   | 87   | 87   | 87   | 5     | 5     |
| g / C, Green / Cycle                    | 0.87 | 0.87 | 0.87 | 0.87 | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.38 | 0.38 | 0.04 | 0.32 | 0.02  | 0.02  |
| s, saturation flow rate [veh/h]         | 1900 | 1900 | 1800 | 3800 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 1649 | 1649 | 1437 | 3297 | 94    | 99    |
| d1, Uniform Delay [s]                   | 1.42 | 1.42 | 0.91 | 1.29 | 45.59 | 45.94 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.87 | 0.87 | 0.07 | 0.32 | 1.74  | 3.07  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |      |       |       |       |
|---------------------------------------|-------|-------|------|-------|-------|-------|
| X, volume / capacity                  | 0.44  | 0.44  | 0.05 | 0.37  | 0.30  | 0.44  |
| d, Delay for Lane Group [s/veh]       | 2.29  | 2.29  | 0.98 | 1.62  | 47.32 | 49.01 |
| Lane Group LOS                        | A     | A     | A    | A     | D     | D     |
| Critical Lane Group                   | Yes   | No    | No   | No    | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.79  | 0.79  | 0.05 | 0.45  | 0.72  | 1.15  |
| 50th-Percentile Queue Length [ft/ln]  | 19.76 | 19.76 | 1.34 | 11.24 | 17.96 | 28.77 |
| 95th-Percentile Queue Length [veh/ln] | 1.42  | 1.42  | 0.10 | 0.81  | 1.29  | 2.07  |
| 95th-Percentile Queue Length [ft/ln]  | 35.56 | 35.56 | 2.40 | 20.23 | 32.33 | 51.78 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 2.29  | 2.29 | 0.98 | 1.62 | 47.32 | 49.01 |
| Movement LOS                    | A     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 2.29  |      | 1.58 |      | 48.36 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 3.13  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.443 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 0.0   | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 0.00  | 39.59 | 39.59 |
| I_p,int, Pedestrian LOS Score for Intersection             | 0.000 | 3.023 | 2.104 |
| Crosswalk LOS  | F     | C     | B     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1340  | 1340  | 500   |
| d_b, Bicycle Delay [s]                                     | 5.44  | 5.44  | 28.11 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.766 | 2.636 | 1.560 |
| Bicycle LOS  | C     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



*APPENDIX H-II*

**YEAR 2035 CUMULATIVE PLUS PROJECT  
WITH MITIGATION TRAFFIC CONDITIONS**

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*APPENDIX H-III*

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 33.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.007 |

**Intersection Setup**

| Name                         | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|------------------------------|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound      |      |      | Westbound      |      |      |
| Lane Configuration           |            |      |      |            |      |      |                |      |      |                |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left           | Thru | Righ | Left           | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 | 12.0           | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 0          | 0    | 1    | 1          | 0    | 1    | 0              | 0    | 0    | 1              | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.           | 100. | 100. | 100.           | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 | 0.00           | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00          |      |      | 30.00          |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00           |      |      | 0.00           |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No             |      |      | No             |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes            |      |      | Yes            |      |      |

**Volumes**

| Name   | Rose Drive |      |      | Rose Drive |      |      | Vesuvius Drive |      |      | Vesuvius Drive |      |      |
|--|------------|------|------|------------|------|------|----------------|------|------|----------------|------|------|
|  | 54         | 828  | 15   | 6          | 150  | 67   | 61             | 0    | 207  | 35             | 0    | 13   |
| Base Volume Input [veh/h]                                      | 54         | 828  | 15   | 6          | 150  | 67   | 61             | 0    | 207  | 35             | 0    | 13   |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 | 2.00           | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 54         | 828  | 15   | 6          | 150  | 67   | 61             | 0    | 207  | 35             | 0    | 13   |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 | 1.00           | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 14         | 207  | 4    | 2          | 376  | 17   | 15             | 0    | 52   | 9              | 0    | 3    |
| Total Analysis Volume [veh/h]                                  | 54         | 828  | 15   | 6          | 150  | 67   | 61             | 0    | 207  | 35             | 0    | 13   |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No             |      | No   | No             |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0              | 0    | 0    | 0              | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0              |      |      | 0              |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 6    | 0    | 0    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 91   | 0    | 0    | 91   | 0    | 0    | 29   | 0    | 0    | 29   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 7    | 0    | 0    | 14   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 92   | 92   | 92   | 92   | 92   | 92   | 20    | 20    | 20    |
| g / C, Green / Cycle                    | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.77 | 0.16  | 0.16  | 0.16  |
| (v / s)_i Volume / Saturation Flow Rate | 0.03 | 0.22 | 0.22 | 0.00 | 0.79 | 0.04 | 0.15  | 0.02  | 0.01  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 180  | 1800  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 64   | 146  | 146  | 128  | 146  | 138  | 333   | 64    | 312   |
| d1, Uniform Delay [s]                   | 3.30 | 4.12 | 4.11 | 3.21 | 13.8 | 3.33 | 49.13 | 42.65 | 42.10 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.15  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 74.8 | 0.50 | 0.50 | 0.01 | 31.2 | 0.07 | 6.37  | 7.03  | 0.05  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |        |       |       |
|---------------------------------------|------|------|------|------|------|------|--------|-------|-------|
| X, volume / capacity                  | 0.85 | 0.29 | 0.29 | 0.00 | 1.03 | 0.05 | 0.80   | 0.55  | 0.04  |
| d, Delay for Lane Group [s/veh]       | 78.1 | 4.62 | 4.61 | 3.22 | 45.1 | 3.39 | 55.50  | 49.67 | 42.16 |
| Lane Group LOS                        | E    | A    | A    | A    | F    | A    | E      | D     | D     |
| Critical Lane Group                   | No   | No   | No   | No   | Yes  | No   | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.59 | 2.83 | 2.81 | 0.03 | 43.1 | 0.36 | 8.44   | 1.02  | 0.33  |
| 50th-Percentile Queue Length [ft/ln]  | 39.8 | 70.7 | 70.1 | 0.79 | 107  | 9.04 | 210.98 | 25.38 | 8.28  |
| 95th-Percentile Queue Length [veh/ln] | 2.87 | 5.09 | 5.05 | 0.06 | 55.4 | 0.65 | 13.20  | 1.83  | 0.60  |
| 95th-Percentile Queue Length [ft/ln]  | 71.7 | 127. | 126. | 1.41 | 138  | 16.2 | 330.08 | 45.68 | 14.90 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |       |      |      |       |      |      |       |      |      |      |
|---------------------------------|-------|------|-------|------|------|-------|------|------|-------|------|------|------|
| d_M, Delay for Movement [s/veh] | 78.1  | 4.62 | 4.61  | 3.22 | 45.1 | 3.39  | 55.5 | 55.5 | 55.5  | 49.6 | 42.1 | 42.1 |
| Movement LOS                    | E     | A    | A     | A    | F    | A     | E    | E    | E     | D    | D    | D    |
| d_A, Approach Delay [s/veh]     | 9.04  |      | 43.21 |      |      | 55.50 |      |      | 47.64 |      |      |      |
| Approach LOS                    | A     |      | D     |      |      | E     |      |      | D     |      |      |      |
| d_I, Intersection Delay [s/veh] | 33.48 |      |       |      |      |       |      |      |       |      |      |      |
| Intersection LOS                | C     |      |       |      |      |       |      |      |       |      |      |      |
| Intersection V/C                | 1.007 |      |       |      |      |       |      |      |       |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 49.45 | 49.45 | 49.45 | 49.45 |
| I_p,int, Pedestrian LOS Score for Intersection             | 2.839 | 2.884 | 1.995 | 1.985 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1451  | 1451  | 417   | 417   |
| d_b, Bicycle Delay [s]                                     | 4.51  | 4.51  | 37.56 | 37.56 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.300 | 4.160 | 2.002 | 1.639 |
| Bicycle LOS  | B     | D     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 24: Driveway A at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.7   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.342 |

**Intersection Setup**

| Name                         | Driveway A |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|------------------------------|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|                              | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Approach                     | Northbound |      |      | Southbound |      |      | Eastbound    |      |      | Westbound    |      |      |
| Lane Configuration           |            |      |      |            |      |      |              |      |      |              |      |      |
| Turning Movement             | Left       | Thru | Righ | Left       | Thru | Righ | Left         | Thru | Righ | Left         | Thru | Righ |
| Lane Width [ft]              | 12.0       | 12.0 | 12.0 | 12.0       | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 | 12.0         | 12.0 | 12.0 |
| No. of Lanes in Entry Pocket | 1          | 0    | 0    | 1          | 0    | 0    | 1            | 0    | 0    | 1            | 0    | 0    |
| Entry Pocket Length [ft]     | 100.       | 100. | 100. | 100.       | 100. | 100. | 100.         | 100. | 100. | 100.         | 100. | 100. |
| No. of Lanes in Exit Pocket  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Exit Pocket Length [ft]      | 0.00       | 0.00 | 0.00 | 0.00       | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 | 0.00         | 0.00 | 0.00 |
| Speed [mph]                  | 30.00      |      |      | 30.00      |      |      | 30.00        |      |      | 30.00        |      |      |
| Grade [%]                    | 0.00       |      |      | 0.00       |      |      | 0.00         |      |      | 0.00         |      |      |
| Curb Present                 | No         |      |      | No         |      |      | No           |      |      | No           |      |      |
| Crosswalk                    | Yes        |      |      | Yes        |      |      | Yes          |      |      | Yes          |      |      |

**Volumes**

| Name   | Driveway A |      |      | Driveway A |      |      | Lambert Road |      |      | Lambert Road |      |      |
|--|------------|------|------|------------|------|------|--------------|------|------|--------------|------|------|
|  |            |      |      |            |      |      |              |      |      |              |      |      |
| Base Volume Input [veh/h]                                      | 90         | 0    | 5    | 22         | 0    | 33   | 11           | 908  | 40   | 2            | 132  | 8    |
| Base Volume Adjustment Factor                                  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 | 2.00         | 2.00 | 2.00 |
| Growth Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Diverted Trips [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Pass-by Trips [veh/h]  | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Other Volume [veh/h]   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 90         | 0    | 5    | 22         | 0    | 33   | 11           | 908  | 40   | 2            | 132  | 8    |
| Peak Hour Factor   | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 | 1.00         | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 23         | 0    | 1    | 6          | 0    | 8    | 3            | 227  | 10   | 1            | 330  | 2    |
| Total Analysis Volume [veh/h]                                  | 90         | 0    | 5    | 22         | 0    | 33   | 11           | 908  | 40   | 2            | 132  | 8    |
| Presence of On-Street Parking                                  | No         |      | No   | No         |      | No   | No           |      | No   | No           |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0          | 0    | 0    | 0          | 0    | 0    | 0            | 0    | 0    | 0            | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |
| Bicycle Volume [bicycles/h]                                    | 0          |      |      | 0          |      |      | 0            |      |      | 0            |      |      |



**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Per  | Per  | Per  | Per  | Per  | Per  | Prot | Per  | Per  | Prot | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 0    | 8    | 0    | 0    | 4    | 0    | 5    | 2    | 0    | 1    | 6    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | -    | -    | -    | -    | -    | -    | Lea  | -    | -    | Lea  | -    | -    |
| Minimum Green [s]            | 0    | 6    | 0    | 0    | 6    | 0    | 6    | 6    | 0    | 6    | 6    | 0    |
| Maximum Green [s]            | 0    | 30   | 0    | 0    | 30   | 0    | 30   | 30   | 0    | 30   | 30   | 0    |
| Amber [s]                    | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| All red [s]                  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  |
| Split [s]                    | 0    | 58   | 0    | 0    | 58   | 0    | 10   | 22   | 0    | 10   | 22   | 0    |
| Vehicle Extension [s]        | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 24   | 0    | 0    | 24   | 0    | 0    | 11   | 0    | 0    | 11   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  |
| Minimum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Maximum Recall               |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Pedestrian Recall            |      | No   |      |      | No   |      | No   | No   |      | No   | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | L    | C    | C    | L    | C    | C    |
|---|-------|-------|-------|-------|------|------|------|------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90   | 90   | 90   | 90   | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6     | 6     | 6     | 6     | 2    | 72   | 72   | 0    | 71   | 71   |
| g / C, Green / Cycle                    | 0.07  | 0.07  | 0.07  | 0.07  | 0.02 | 0.80 | 0.80 | 0.00 | 0.78 | 0.78 |
| (v / s)_i Volume / Saturation Flow Rate | 0.05  | 0.00  | 0.01  | 0.02  | 0.01 | 0.16 | 0.17 | 0.00 | 0.23 | 0.24 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 180  | 380  | 190  | 180  | 380  | 190  |
| c, Capacity [veh/h]                     | 137   | 127   | 162   | 127   | 31   | 302  | 151  | 8    | 297  | 148  |
| d1, Uniform Delay [s]                   | 41.26 | 39.30 | 39.68 | 39.89 | 43.7 | 2.26 | 2.27 | 44.6 | 2.77 | 2.81 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 5.21  | 0.12  | 0.38  | 1.07  | 6.66 | 0.16 | 0.32 | 14.7 | 0.25 | 0.54 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |      |      |      |      |      |      |
|---------------------------------------|-------|-------|-------|-------|------|------|------|------|------|------|
| X, volume / capacity                  | 0.66  | 0.04  | 0.14  | 0.26  | 0.35 | 0.21 | 0.21 | 0.24 | 0.29 | 0.31 |
| d, Delay for Lane Group [s/veh]       | 46.46 | 39.42 | 40.06 | 40.95 | 50.4 | 2.42 | 2.60 | 59.3 | 3.02 | 3.34 |
| Lane Group LOS                        | D     | D     | D     | D     | D    | A    | A    | E    | A    | A    |
| Critical Lane Group                   | Yes   | No    | No    | No    | Yes  | No   | No   | No   | No   | Yes  |
| 50th-Percentile Queue Length [veh/ln] | 2.14  | 0.11  | 0.47  | 0.72  | 0.30 | 0.89 | 0.99 | 0.08 | 1.54 | 1.74 |
| 50th-Percentile Queue Length [ft/ln]  | 53.42 | 2.67  | 11.82 | 18.12 | 7.45 | 22.3 | 24.8 | 1.94 | 38.4 | 43.5 |
| 95th-Percentile Queue Length [veh/ln] | 3.85  | 0.19  | 0.85  | 1.30  | 0.54 | 1.61 | 1.79 | 0.14 | 2.76 | 3.14 |
| 95th-Percentile Queue Length [ft/ln]  | 96.16 | 4.81  | 21.27 | 32.61 | 13.4 | 40.1 | 44.7 | 3.49 | 69.1 | 78.4 |

**Movement, Approach, & Intersection Results**

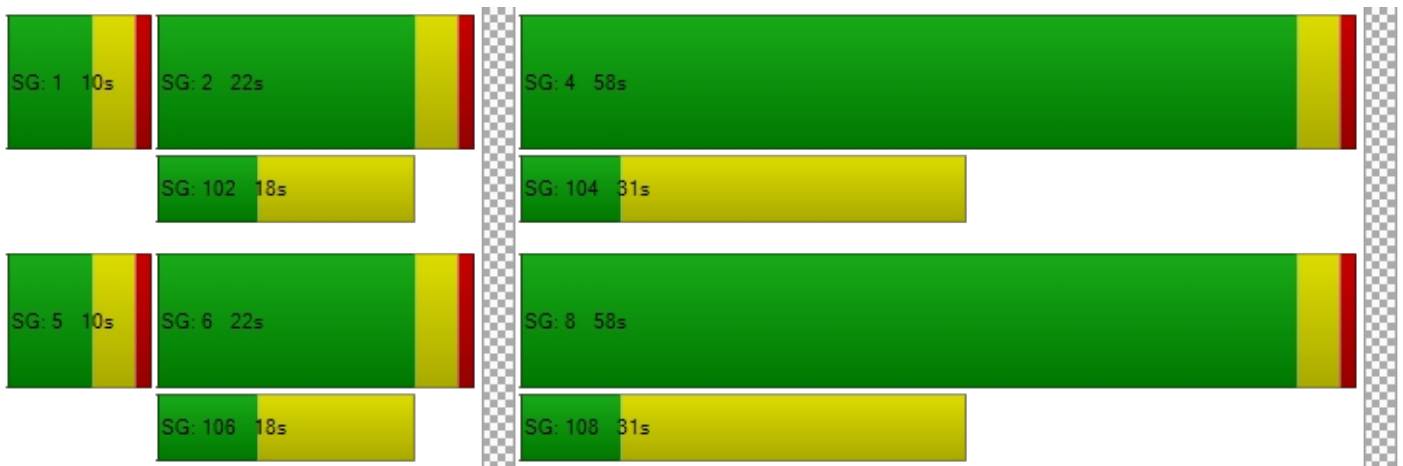
|                                 |       |      |      |       |      |      |      |      |      |      |      |      |
|---------------------------------|-------|------|------|-------|------|------|------|------|------|------|------|------|
| d_M, Delay for Movement [s/veh] | 46.4  | 39.4 | 39.4 | 40.0  | 40.9 | 40.9 | 50.4 | 2.47 | 2.60 | 59.3 | 3.13 | 3.34 |
| Movement LOS                    | D     | D    | D    | D     | D    | D    | D    | A    | A    | E    | A    | A    |
| d_A, Approach Delay [s/veh]     | 46.09 |      |      | 40.59 |      |      | 3.03 |      |      | 3.21 |      |      |
| Approach LOS                    | D     |      |      | D     |      |      | A    |      |      | A    |      |      |
| d_I, Intersection Delay [s/veh] | 5.65  |      |      |       |      |      |      |      |      |      |      |      |
| Intersection LOS                | A     |      |      |       |      |      |      |      |      |      |      |      |
| Intersection V/C                | 0.342 |      |      |       |      |      |      |      |      |      |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 34.68 | 34.68 | 34.68 | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection             | 1.984 | 1.964 | 3.056 | 2.940 |
| Crosswalk LOS  | A     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1200  | 1200  | 400   | 400   |
| d_b, Bicycle Delay [s]                                     | 7.21  | 7.21  | 28.81 | 28.81 |
| I_b,int, Bicycle LOS Score for Intersection                | 1.716 | 1.650 | 2.087 | 2.292 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**





|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 9.3   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.692 |

**Intersection Setup**

| Name                         | Va Av  |      |       | Va Av   |      |       | Driveway B  |      |       | Driveway B  |      |       |
|------------------------------|--|------|-------|---|------|-------|---|------|-------|---|------|-------|
|                              | Northbound   |      |       | Southbound  |      |       | Eastbound   |      |       | Westbound   |      |       |
| Approach                     | Northbound   |      |       | Southbound  |      |       | Eastbound   |      |       | Westbound   |      |       |
| Lane Configuration           |  |      |       |  |      |       |  |      |       |  |      |       |
| Turning Movement             | Left   | Thru | Right | Left  | Thru | Right | Left  | Thru | Right | Left  | Thru | Right |
| Lane Width [ft]              | 12.0   | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  | 12.0  | 12.0 | 12.0  |
| No. of Lanes in Entry Pocket | 1  | 0    | 0     | 1   | 0    | 0     | 1   | 0    | 0     | 1   | 0    | 0     |
| Entry Pocket Length [ft]     | 100.   | 100. | 100.  | 100.  | 100. | 100.  | 100.  | 100. | 100.  | 100.  | 100. | 100.  |
| No. of Lanes in Exit Pocket  | 0  | 0    | 0     | 0   | 0    | 0     | 0   | 0    | 0     | 0   | 0    | 0     |
| Exit Pocket Length [ft]      | 0.00   | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  | 0.00  | 0.00 | 0.00  |
| Speed [mph]                  | 45.00  |      |       | 45.00   |      |       | 25.00   |      |       | 25.00   |      |       |
| Grade [%]                    | 0.00   |      |       | 0.00  |      |       | 0.00  |      |       | 0.00  |      |       |
| Curb Present                 | No   |      |       | No  |      |       | No  |      |       | No  |      |       |
| Crosswalk                    | Yes  |      |       | Yes   |      |       | Yes   |      |       | Yes   |      |       |

**Volumes**

| Name   | Va Av |      |      | Va Av |      |      | Driveway B |      |      | Driveway B |      |      |
|--|-------|------|------|-------|------|------|------------|------|------|------------|------|------|
|  |       |      |      |       |      |      |            |      |      |            |      |      |
| Base Volume Input [veh/h]                                      | 33    | 727  | 13   | 13    | 209  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Base Volume Adjustment Factor                                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Heavy Vehicles Percentage [%]                                  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 | 2.00       | 2.00 | 2.00 |
| Growth Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| In-Process Volume [veh/h]                                      | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Site-Generated Trips [veh/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Diverted Trips [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Pass-by Trips [veh/h]  | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Existing Site Adjustment Volume [veh/h]                        | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Other Volume [veh/h]   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Right Turn on Red Volume [veh/h]                               | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Total Hourly Volume [veh/h]                                    | 33    | 727  | 13   | 13    | 209  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Peak Hour Factor   | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Other Adjustment Factor  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 |
| Total 15-Minute Volume [veh/h]                                 | 8     | 182  | 3    | 3     | 525  | 1    | 1          | 0    | 18   | 9          | 0    | 9    |
| Total Analysis Volume [veh/h]                                  | 33    | 727  | 13   | 13    | 209  | 2    | 3          | 0    | 71   | 36         | 0    | 36   |
| Presence of On-Street Parking                                  | No    |      | No   | No    |      | No   | No         |      | No   | No         |      | No   |
| On-Street Parking Maneuver Rate [/h]                           | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| Local Bus Stopping Rate [/h]                                   | 0     | 0    | 0    | 0     | 0    | 0    | 0          | 0    | 0    | 0          | 0    | 0    |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |
| Bicycle Volume [bicycles/h]                                    | 0     |      |      | 0     |      |      | 0          |      |      | 0          |      |      |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Prot | Per  | Per  | Prot | Per  | Per  | Per  | Per  | Per  | Per  | Per  | Per  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Signal Group                 | 1    | 6    | 0    | 5    | 2    | 0    | 0    | 8    | 0    | 0    | 4    | 0    |
| Auxiliary Signal Groups      |      |      |      |      |      |      |      |      |      |      |      |      |
| Lead / Lag                   | Lea  | -    | -    | Lea  | -    | -    | -    | -    | -    | -    | -    | -    |
| Minimum Green [s]            | 6    | 6    | 0    | 6    | 6    | 0    | 0    | 6    | 0    | 0    | 6    | 0    |
| Maximum Green [s]            | 30   | 30   | 0    | 30   | 30   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Amber [s]                    | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| All red [s]                  | 1.0  | 1.0  | 0.0  | 1.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  | 0.0  | 1.0  | 0.0  |
| Split [s]                    | 10   | 60   | 0    | 10   | 60   | 0    | 0    | 30   | 0    | 0    | 30   | 0    |
| Vehicle Extension [s]        | 3.0  | 3.0  | 0.0  | 3.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  | 0.0  | 3.0  | 0.0  |
| Walk [s]                     | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    | 0    | 7    | 0    |
| Pedestrian Clearance [s]     | 0    | 11   | 0    | 0    | 11   | 0    | 0    | 18   | 0    | 0    | 18   | 0    |
| Delayed Vehicle Green [s]    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Rest In Walk                 |      | No   |      | No   |      |      | No   |      |      |      | No   |      |
| I1, Start-Up Lost Time [s]   | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| I2, Clearance Lost Time [s]  | 2.0  | 2.0  | 0.0  | 2.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  | 0.0  | 2.0  | 0.0  |
| Minimum Recall               | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Maximum Recall               | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Pedestrian Recall            | No   | No   |      | No   | No   |      |      | No   |      |      | No   |      |
| Detector Location [ft]       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Detector Length [ft]         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | C    | L     | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 100  | 100  | 100  | 100  | 100  | 100  | 100   | 100   | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.00  | 0.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4    | 81   | 81   | 2    | 79   | 79   | 5     | 5     | 5     | 5     |
| g / C, Green / Cycle                    | 0.04 | 0.81 | 0.81 | 0.02 | 0.79 | 0.79 | 0.05  | 0.05  | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02 | 0.20 | 0.19 | 0.01 | 0.55 | 0.55 | 0.00  | 0.04  | 0.02  | 0.02  |
| s, saturation flow rate [veh/h]         | 180  | 190  | 190  | 180  | 190  | 190  | 1800  | 1900  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 66   | 153  | 153  | 34   | 150  | 150  | 102   | 100   | 75    | 100   |
| d1, Uniform Delay [s]                   | 47.2 | 2.28 | 2.28 | 48.5 | 4.90 | 4.90 | 44.94 | 46.60 | 45.78 | 45.73 |
| k, delay calibration                    | 0.11 | 0.50 | 0.50 | 0.11 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.81 | 0.37 | 0.37 | 7.05 | 2.73 | 2.73 | 0.12  | 8.80  | 4.77  | 2.15  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |      |      |      |      |      |      |       |       |       |       |
|---------------------------------------|------|------|------|------|------|------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.50 | 0.24 | 0.24 | 0.39 | 0.70 | 0.70 | 0.03  | 0.71  | 0.48  | 0.36  |
| d, Delay for Lane Group [s/veh]       | 53.0 | 2.65 | 2.65 | 55.5 | 7.63 | 7.63 | 45.05 | 55.40 | 50.55 | 47.88 |
| Lane Group LOS                        | D    | A    | A    | E    | A    | A    | D     | E     | D     | D     |
| Critical Lane Group                   | Yes  | No   | No   | No   | Yes  | No   | No    | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.89 | 0.96 | 0.95 | 0.38 | 6.39 | 6.39 | 0.07  | 1.99  | 0.97  | 0.93  |
| 50th-Percentile Queue Length [ft/ln]  | 22.1 | 24.0 | 23.8 | 9.41 | 159. | 159. | 1.86  | 49.75 | 24.20 | 23.21 |
| 95th-Percentile Queue Length [veh/ln] | 1.60 | 1.73 | 1.72 | 0.68 | 10.5 | 10.5 | 0.13  | 3.58  | 1.74  | 1.67  |
| 95th-Percentile Queue Length [ft/ln]  | 39.8 | 43.2 | 42.9 | 16.9 | 263. | 263. | 3.35  | 89.56 | 43.56 | 41.77 |

**Movement, Approach, & Intersection Results**

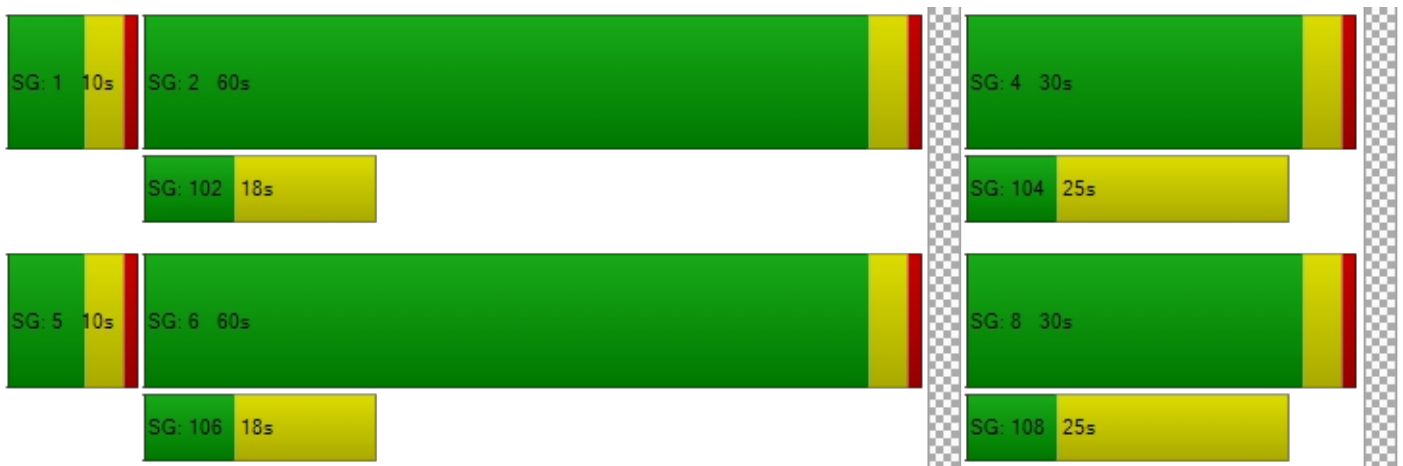
|                                 |       |      |      |      |      |      |       |      |      |       |      |      |
|---------------------------------|-------|------|------|------|------|------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 53.0  | 2.65 | 2.65 | 55.5 | 7.63 | 7.63 | 45.0  | 55.4 | 55.4 | 50.5  | 47.8 | 47.8 |
| Movement LOS                    | D     | A    | A    | E    | A    | A    | D     | E    | E    | D     | D    | D    |
| d_A, Approach Delay [s/veh]     | 4.80  |      |      | 7.93 |      |      | 54.98 |      |      | 49.21 |      |      |
| Approach LOS                    | A     |      |      | A    |      |      | D     |      |      | D     |      |      |
| d_I, Intersection Delay [s/veh] | 9.26  |      |      |      |      |      |       |      |      |       |      |      |
| Intersection LOS                | A     |      |      |      |      |      |       |      |      |       |      |      |
| Intersection V/C                | 0.692 |      |      |      |      |      |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 39.61 | 39.61 | 39.61 | 39.61 |
| I_p,int, Pedestrian LOS Score for Intersection             | 3.227 | 3.151 | 1.975 | 1.972 |
| Crosswalk LOS  | C     | C     | A     | A     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1120  | 1120  | 520   | 520   |
| d_b, Bicycle Delay [s]                                     | 9.68  | 9.68  | 27.38 | 27.38 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.197 | 3.304 | 1.682 | 1.678 |
| Bicycle LOS  | B     | C     | A     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |





**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 3.8   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.444 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           | T          |        | T          |        | T T        |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 40.00      |        | 40.00      |        | 25.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Curb Present                 | No         |        | No         |        | No         |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name   | Rose Drive |        | Rose Drive |        | Driveway C |        |
|--|------------|--------|------------|--------|------------|--------|
|  |            |        |            |        |            |        |
| Base Volume Input [veh/h]                                      | 818        | 14     | 23         | 1406   | 41         | 66     |
| Base Volume Adjustment Factor                                  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]                                  | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                                      | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]   | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]  | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]   | 0          | 0      | 0          | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]                               | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                                    | 818        | 14     | 23         | 1406   | 41         | 66     |
| Peak Hour Factor   | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor  | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]                                 | 205        | 4      | 6          | 352    | 10         | 17     |
| Total Analysis Volume [veh/h]                                  | 818        | 14     | 23         | 1406   | 41         | 66     |
| Presence of On-Street Parking                                  | No         | No     | No         | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]                           | 0          | 0      | 0          | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                                   | 0          | 0      | 0          | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0          |        | 0          |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h]  | 0          |        | 0          |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0          |        | 0          |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]  | 0          |        | 0          |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]                         | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]                                    | 0          |        | 0          |        | 0          |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissiv | Permissiv | Permissiv | Permissiv | Split | Split |
|------------------------------|-----------|-----------|-----------|-----------|-------|-------|
| Signal Group                 | 6         | 0         | 0         | 2         | 7     | 0     |
| Auxiliary Signal Groups      |           |           |           |           |       |       |
| Lead / Lag                   | -         | -         | -         | -         | Lead  | -     |
| Minimum Green [s]            | 6         | 0         | 0         | 6         | 6     | 0     |
| Maximum Green [s]            | 30        | 0         | 0         | 30        | 30    | 0     |
| Amber [s]                    | 3.0       | 0.0       | 0.0       | 3.0       | 3.0   | 0.0   |
| All red [s]                  | 1.0       | 0.0       | 0.0       | 1.0       | 1.0   | 0.0   |
| Split [s]                    | 61        | 0         | 0         | 61        | 29    | 0     |
| Vehicle Extension [s]        | 3.0       | 0.0       | 0.0       | 3.0       | 3.0   | 0.0   |
| Walk [s]                     | 7         | 0         | 0         | 0         | 7     | 0     |
| Pedestrian Clearance [s]     | 11        | 0         | 0         | 0         | 18    | 0     |
| Delayed Vehicle Green [s]    | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| Rest In Walk                 | No        |           |           | No        | No    |       |
| I1, Start-Up Lost Time [s]   | 2.0       | 0.0       | 0.0       | 2.0       | 2.0   | 0.0   |
| I2, Clearance Lost Time [s]  | 2.0       | 0.0       | 0.0       | 2.0       | 2.0   | 0.0   |
| Minimum Recall               | No        |           |           | No        | No    |       |
| Maximum Recall               | No        |           |           | No        | No    |       |
| Pedestrian Recall            | No        |           |           | No        | No    |       |
| Detector Location [ft]       | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| Detector Length [ft]         | 0.0       | 0.0       | 0.0       | 0.0       | 0.0   | 0.0   |
| I, Upstream Filtering Factor | 1.00      | 1.00      | 1.00      | 1.00      | 1.00  | 1.00  |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C    | C    | L    | C    | L     | R     |
|---|------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 90   | 90   | 90   | 90   | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 2.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 76   | 76   | 76   | 76   | 6     | 6     |
| g / C, Green / Cycle                    | 0.85 | 0.85 | 0.85 | 0.85 | 0.06  | 0.06  |
| (v / s)_i Volume / Saturation Flow Rate | 0.22 | 0.22 | 0.01 | 0.37 | 0.02  | 0.03  |
| s, saturation flow rate [veh/h]         | 1900 | 1900 | 1800 | 3800 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 1611 | 1611 | 1473 | 3222 | 114   | 120   |
| d1, Uniform Delay [s]                   | 1.33 | 1.33 | 1.05 | 1.65 | 40.38 | 40.88 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.39 | 0.39 | 0.02 | 0.43 | 1.92  | 3.90  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |      |       |       |       |
|---------------------------------------|-------|-------|------|-------|-------|-------|
| X, volume / capacity                  | 0.26  | 0.26  | 0.02 | 0.44  | 0.36  | 0.55  |
| d, Delay for Lane Group [s/veh]       | 1.72  | 1.72  | 1.07 | 2.08  | 42.30 | 44.78 |
| Lane Group LOS                        | A     | A     | A    | A     | D     | D     |
| Critical Lane Group                   | No    | No    | No   | Yes   | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.41  | 0.41  | 0.02 | 0.69  | 0.93  | 1.55  |
| 50th-Percentile Queue Length [ft/ln]  | 10.32 | 10.32 | 0.46 | 17.34 | 23.30 | 38.74 |
| 95th-Percentile Queue Length [veh/ln] | 0.74  | 0.74  | 0.03 | 1.25  | 1.68  | 2.79  |
| 95th-Percentile Queue Length [ft/ln]  | 18.57 | 18.57 | 0.83 | 31.21 | 41.93 | 69.73 |

**Movement, Approach, & Intersection Results**

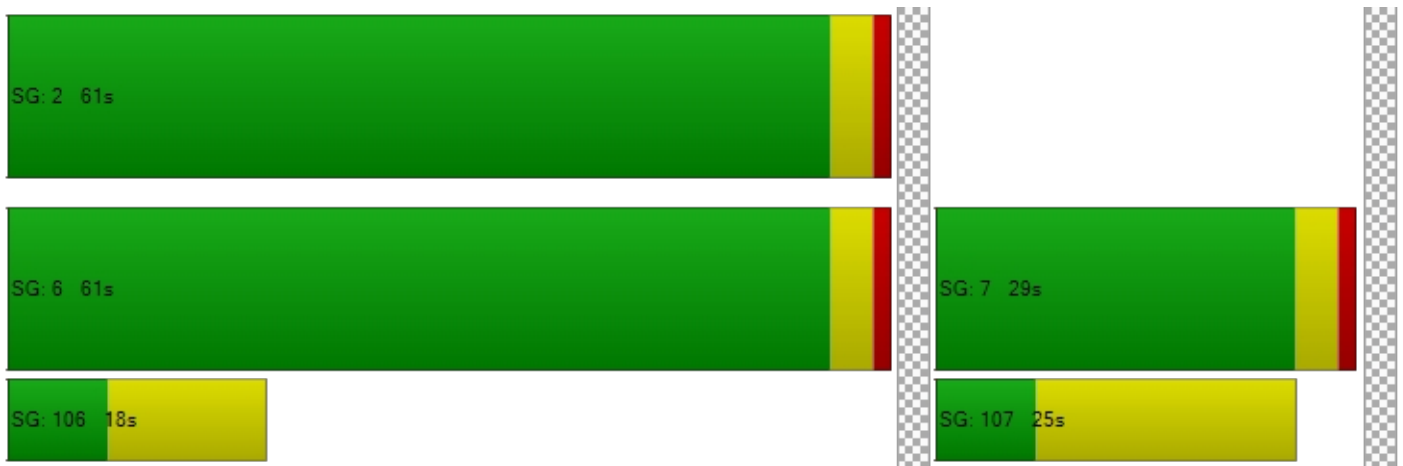
|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 1.72  | 1.72 | 1.07 | 2.08 | 42.30 | 44.78 |
| Movement LOS                    | A     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 1.72  |      | 2.07 |      | 43.83 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 3.83  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.444 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                         | 0.0   | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]   | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]    | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                  | 0.00  | 34.65 | 34.65 |
| I_p,int, Pedestrian LOS Score for Intersection             | 0.000 | 2.901 | 2.011 |
| Crosswalk LOS  | F     | C     | B     |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]             | 1267  | 1267  | 556   |
| d_b, Bicycle Delay [s]                                     | 6.04  | 6.04  | 23.45 |
| I_b,int, Bicycle LOS Score for Intersection                | 2.246 | 2.739 | 1.560 |
| Bicycle LOS  | B     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 15: Rose Drive at Vesuvius Drive**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 10.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.847 |

**Intersection Setup**

| Name                         | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound      |        |        | Westbound      |        |        |
| Lane Configuration           |            |        |        |            |        |        |                |        |        |                |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left           | Thru   | Right  | Left           | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  | 12.00          | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1      | 1          | 0      | 1      | 0              | 0      | 0      | 1              | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 | 100.00         | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   | 0.00           | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00          |        |        | 30.00          |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00           |        |        | 0.00           |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No             |        |        | No             |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes            |        |        | Yes            |        |        |

**Volumes**

| Name  | Rose Drive |        |        | Rose Drive |        |        | Vesuvius Drive |        |        | Vesuvius Drive |        |        |
|---|------------|--------|--------|------------|--------|--------|----------------|--------|--------|----------------|--------|--------|
|   |            |        |        |            |        |        |                |        |        |                |        |        |
| Base Volume Input [veh/h]                   | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   | 2.00           | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 | 1.0000         | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 42         | 318    | 8      | 3          | 332    | 25     | 12             | 0      | 30     | 7              | 0      | 3      |
| Total Analysis Volume [veh/h]               | 169        | 1272   | 33     | 13         | 1326   | 101    | 49             | 0      | 118    | 26             | 0      | 10     |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No             |        | No     | No             |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0              | 0      | 0      | 0              | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0              |        |        | 0              |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 0       | 6       | 0       | 0       | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |         |         |         |         |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 0       | 91      | 0       | 0       | 91      | 0       | 0       | 29      | 0       | 0       | 29      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 7       | 0       | 0       | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 11      | 0       | 0       | 7       | 0       | 0       | 14      | 0       | 0       | 18      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         |         | No      |         |         | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         |         | No      |         |         | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L    | C    | C    | L    | C    | R    | C     | L     | C     |
|---|------|------|------|------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 120  | 120  | 120  | 120  | 120  | 120  | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00 | 0.00 | 0.00 | 2.00 | 0.00 | 0.00 | 2.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 99   | 99   | 99   | 99   | 99   | 99   | 13    | 13    | 13    |
| g / C, Green / Cycle                    | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.11  | 0.11  | 0.11  |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.34 | 0.34 | 0.01 | 0.70 | 0.06 | 0.09  | 0.01  | 0.01  |
| s, saturation flow rate [veh/h]         | 1800 | 1900 | 1900 | 1800 | 1900 | 1800 | 1800  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 769  | 1566 | 1566 | 1336 | 1566 | 1484 | 235   | 65    | 207   |
| d1, Uniform Delay [s]                   | 2.04 | 2.83 | 2.82 | 1.87 | 6.13 | 1.96 | 52.41 | 48.24 | 47.80 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.66 | 0.82 | 0.81 | 0.01 | 5.86 | 0.09 | 3.93  | 3.88  | 0.10  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |      |        |       |        |       |       |
|---------------------------------------|-------|--------|--------|------|--------|-------|--------|-------|-------|
| X, volume / capacity                  | 0.22  | 0.42   | 0.42   | 0.01 | 0.85   | 0.07  | 0.71   | 0.40  | 0.05  |
| d, Delay for Lane Group [s/veh]       | 2.70  | 3.65   | 3.63   | 1.88 | 11.98  | 2.05  | 56.34  | 52.12 | 47.89 |
| Lane Group LOS                        | A     | A      | A      | A    | B      | A     | E      | D     | D     |
| Critical Lane Group                   | No    | No     | No     | No   | Yes    | No    | Yes    | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.70  | 3.33   | 3.30   | 0.04 | 15.61  | 0.35  | 5.19   | 0.78  | 0.27  |
| 50th-Percentile Queue Length [ft/ln]  | 17.39 | 83.26  | 82.42  | 1.10 | 390.23 | 8.87  | 129.68 | 19.42 | 6.87  |
| 95th-Percentile Queue Length [veh/ln] | 1.25  | 5.99   | 5.93   | 0.08 | 22.09  | 0.64  | 8.92   | 1.40  | 0.49  |
| 95th-Percentile Queue Length [ft/ln]  | 31.30 | 149.87 | 148.36 | 1.97 | 552.22 | 15.97 | 223.06 | 34.96 | 12.36 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |       |      |       |       |       |       |       |       |
|---------------------------------|-------|------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 2.70  | 3.64 | 3.63 | 1.88  | 11.98 | 2.05 | 56.34 | 56.34 | 56.34 | 52.12 | 47.89 | 47.89 |
| Movement LOS                    | A     | A    | A    | A     | B     | A    | E     | E     | E     | D     | D     | D     |
| d_A, Approach Delay [s/veh]     | 3.53  |      |      | 11.20 |       |      | 56.34 |       |       | 50.95 |       |       |
| Approach LOS                    | A     |      |      | B     |       |      | E     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 10.45 |      |      |       |       |      |       |       |       |       |       |       |
| Intersection LOS                | B     |      |      |       |       |      |       |       |       |       |       |       |
| Intersection V/C                | 0.847 |      |      |       |       |      |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.45 |  |  | 49.45 |  |  | 49.45 |  |  | 49.45 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.899 |  |  | 2.924 |  |  | 2.182 |  |  | 1.999 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | B     |  |  | A     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1451  |  |  | 1451  |  |  | 417   |  |  | 417   |  |  |
| d_b, Bicycle Delay [s]                                   | 4.51  |  |  | 4.51  |  |  | 37.56 |  |  | 37.56 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.776 |  |  | 3.936 |  |  | 1.835 |  |  | 1.619 |  |  |
| Bicycle LOS  | C     |  |  | D     |  |  | A     |  |  | A     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 24: Driveway A at Lambert Road**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.6   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.397 |

**Intersection Setup**

| Name                         | Driveway A |        |        | Driveway A |        |        | Lambert Road |        |        | Lambert Road |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ⇐⇑         |        |        | ⇑⇐         |        |        | ⇑⇑⇑          |        |        | ⇑⇑⇑          |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1          | 0      | 0      | 1          | 0      | 0      | 1            | 0      | 0      | 1            | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00      |        |        | 30.00      |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No         |        |        | No         |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes        |        |        | Yes        |        |        | Yes          |        |        | Yes          |        |        |

**Volumes**

| Name  | Driveway A |        |        | Driveway A |        |        | Lambert Road |        |        | Lambert Road |        |        |
|---|------------|--------|--------|------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]                   | 77         | 0      | 4      | 15         | 0      | 22     | 37           | 1572   | 109    | 5            | 804    | 25     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 77         | 0      | 4      | 15         | 0      | 22     | 37           | 1572   | 109    | 5            | 804    | 25     |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 19         | 0      | 1      | 4          | 0      | 6      | 9            | 393    | 27     | 1            | 201    | 6      |
| Total Analysis Volume [veh/h]               | 77         | 0      | 4      | 15         | 0      | 22     | 37           | 1572   | 109    | 5            | 804    | 25     |
| Presence of On-Street Parking               | No         |        | No     | No         |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0      | 0          | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0          |        |        | 0          |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 35      | 0       | 0       | 35      | 0       | 10       | 45      | 0       | 10       | 45      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 24      | 0       | 0       | 24      | 0       | 0        | 11      | 0       | 0        | 11      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | L     | C     | L     | C    | C    | L     | C    | C    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90   | 90   | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 5     | 5     | 5     | 5     | 4     | 72   | 72   | 1     | 69   | 69   |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.06  | 0.06  | 0.04  | 0.80 | 0.80 | 0.01  | 0.77 | 0.77 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.00  | 0.01  | 0.01  | 0.02  | 0.29 | 0.30 | 0.00  | 0.14 | 0.15 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 3800 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 133   | 112   | 149   | 112   | 75    | 3035 | 1517 | 16    | 2912 | 1456 |
| d1, Uniform Delay [s]                   | 41.65 | 39.95 | 40.20 | 40.34 | 42.24 | 2.58 | 2.60 | 44.33 | 2.87 | 2.89 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 3.92  | 0.13  | 0.29  | 0.85  | 5.02  | 0.34 | 0.71 | 10.03 | 0.14 | 0.30 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.58  | 0.04  | 0.10  | 0.20  | 0.50  | 0.37  | 0.37  | 0.30  | 0.19  | 0.19  |
| d, Delay for Lane Group [s/veh]       | 45.57 | 40.08 | 40.50 | 41.18 | 47.26 | 2.93  | 3.31  | 54.36 | 3.01  | 3.19  |
| Lane Group LOS                        | D     | D     | D     | D     | D     | A     | A     | D     | A     | A     |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | No    | Yes   | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.81  | 0.09  | 0.32  | 0.49  | 0.90  | 1.82  | 2.01  | 0.16  | 0.99  | 1.10  |
| 50th-Percentile Queue Length [ft/ln]  | 45.18 | 2.17  | 8.12  | 12.16 | 22.53 | 45.45 | 50.27 | 3.89  | 24.80 | 27.40 |
| 95th-Percentile Queue Length [veh/ln] | 3.25  | 0.16  | 0.58  | 0.88  | 1.62  | 3.27  | 3.62  | 0.28  | 1.79  | 1.97  |
| 95th-Percentile Queue Length [ft/ln]  | 81.32 | 3.91  | 14.61 | 21.88 | 40.55 | 81.81 | 90.49 | 7.00  | 44.64 | 49.31 |

**Movement, Approach, & Intersection Results**

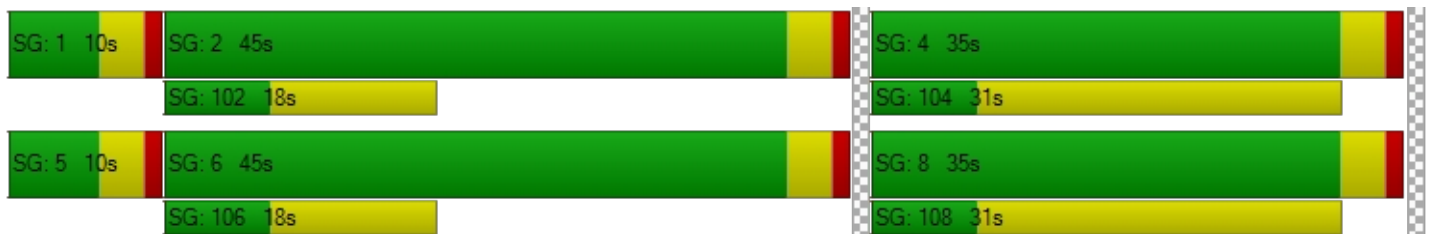
|                                 |       |       |       |       |       |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 45.57 | 40.08 | 40.08 | 40.50 | 41.18 | 41.18 | 47.26 | 3.04 | 3.31 | 54.36 | 3.07 | 3.19 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | A    | A    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 45.30 |       |       | 40.90 |       |       | 4.01  |      |      | 3.38  |      |      |
| Approach LOS                    | D     |       |       | D     |       |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 5.58  |       |       |       |       |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |       |       |       |      |      |       |      |      |
| Intersection V/C                | 0.397 |       |       |       |       |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 34.68 | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.003 | 1.972 | 3.068 | 2.953 |
| Crosswalk LOS  | B     | A     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 689   | 689   | 911   | 911   |
| d_b, Bicycle Delay [s]                                   | 19.35 | 19.35 | 13.35 | 13.35 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.693 | 1.621 | 2.505 | 2.018 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 8.5   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.510 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound  |        |        | Westbound  |        |        |
| Lane Configuration           | ↵↻↵             |        |        | ↵↻↵             |        |        | ↵↻         |        |        | ↵↻         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left       | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1          | 0      | 0      | 1          | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 45.00           |        |        | 45.00           |        |        | 25.00      |        |        | 25.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00       |        |        | 0.00       |        |        |
| Curb Present                 | No              |        |        | No              |        |        | No         |        |        | No         |        |        |
| Crosswalk                    | Yes             |        |        | Yes             |        |        | Yes        |        |        | Yes        |        |        |



**Volumes**

| Name  | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
|   |                 |        |        |                 |        |        |            |        |        |            |        |        |
| Base Volume Input [veh/h]                   | 77              | 1437   | 41     | 41              | 873    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 77              | 1437   | 41     | 41              | 873    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 19              | 359    | 10     | 10              | 218    | 2      | 1          | 0      | 14     | 6          | 0      | 6      |
| Total Analysis Volume [veh/h]               | 77              | 1437   | 41     | 41              | 873    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Presence of On-Street Parking               | No              |        | No     | No              |        | No     | No         |        | No     | No         |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |
| Bicycle Volume [bicycles/h]                 | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|------------------------------|----------|---------|---------|----------|---------|---------|---------|---------|---------|---------|---------|---------|
| Signal Group                 | 1        | 6       | 0       | 5        | 2       | 0       | 0       | 8       | 0       | 0       | 4       | 0       |
| Auxiliary Signal Groups      |          |         |         |          |         |         |         |         |         |         |         |         |
| Lead / Lag                   | Lead     | -       | -       | Lead     | -       | -       | -       | -       | -       | -       | -       | -       |
| Minimum Green [s]            | 6        | 6       | 0       | 6        | 6       | 0       | 0       | 6       | 0       | 0       | 6       | 0       |
| Maximum Green [s]            | 30       | 30      | 0       | 30       | 30      | 0       | 0       | 30      | 0       | 0       | 30      | 0       |
| Amber [s]                    | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| All red [s]                  | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     |
| Split [s]                    | 13       | 51      | 0       | 10       | 48      | 0       | 0       | 29      | 0       | 0       | 29      | 0       |
| Vehicle Extension [s]        | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     |
| Walk [s]                     | 0        | 7       | 0       | 0        | 7       | 0       | 0       | 7       | 0       | 0       | 7       | 0       |
| Pedestrian Clearance [s]     | 0        | 11      | 0       | 0        | 11      | 0       | 0       | 18      | 0       | 0       | 18      | 0       |
| Delayed Vehicle Green [s]    | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Rest In Walk                 |          | No      |         |          | No      |         |         | No      |         |         | No      |         |
| I1, Start-Up Lost Time [s]   | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     |
| Minimum Recall               | No       | No      |         | No       | No      |         |         | No      |         |         | No      |         |
| Maximum Recall               | No       | No      |         | No       | No      |         |         | No      |         |         | No      |         |
| Pedestrian Recall            | No       | No      |         | No       | No      |         |         | No      |         |         | No      |         |
| Detector Location [ft]       | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C    | C    | L     | C    | C    | L     | C     | L     | C     |
|---|-------|------|------|-------|------|------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90   | 90   | 90    | 90   | 90   | 90    | 90    | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 | 2.00  | 0.00  | 2.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 5     | 69   | 69   | 4     | 68   | 68   | 5     | 5     | 5     | 5     |
| g / C, Green / Cycle                    | 0.06  | 0.77 | 0.77 | 0.04  | 0.76 | 0.76 | 0.05  | 0.05  | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.39 | 0.39 | 0.02  | 0.23 | 0.23 | 0.00  | 0.03  | 0.01  | 0.01  |
| s, saturation flow rate [veh/h]         | 1800  | 1900 | 1900 | 1800  | 1900 | 1900 | 1800  | 1900  | 1800  | 1900  |
| c, Capacity [veh/h]                     | 105   | 1463 | 1463 | 79    | 1436 | 1436 | 121   | 101   | 91    | 101   |
| d1, Uniform Delay [s]                   | 41.73 | 3.91 | 3.90 | 42.11 | 3.50 | 3.49 | 40.47 | 41.61 | 40.93 | 40.90 |
| k, delay calibration                    | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 | 0.11  | 0.11  | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.63  | 1.26 | 1.24 | 5.17  | 0.55 | 0.55 | 0.11  | 4.74  | 1.52  | 1.21  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |        |        |       |       |       |       |       |       |       |
|---------------------------------------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.74  | 0.51   | 0.50   | 0.52  | 0.31  | 0.31  | 0.03  | 0.56  | 0.26  | 0.24  |
| d, Delay for Lane Group [s/veh]       | 51.37 | 5.17   | 5.14   | 47.28 | 4.05  | 4.04  | 40.58 | 46.35 | 42.44 | 42.11 |
| Lane Group LOS                        | D     | A      | A      | D     | A     | A     | D     | D     | D     | D     |
| Critical Lane Group                   | No    | Yes    | No     | Yes   | No    | No    | No    | Yes   | No    | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.89  | 3.14   | 3.11   | 0.97  | 1.66  | 1.66  | 0.09  | 1.35  | 0.55  | 0.55  |
| 50th-Percentile Queue Length [ft/ln]  | 47.22 | 78.48  | 77.65  | 24.19 | 41.53 | 41.40 | 2.20  | 33.66 | 13.75 | 13.63 |
| 95th-Percentile Queue Length [veh/ln] | 3.40  | 5.65   | 5.59   | 1.74  | 2.99  | 2.98  | 0.16  | 2.42  | 0.99  | 0.98  |
| 95th-Percentile Queue Length [ft/ln]  | 85.00 | 141.26 | 139.76 | 43.54 | 74.76 | 74.52 | 3.96  | 60.59 | 24.76 | 24.53 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |       |      |      |       |       |       |       |       |       |
|---------------------------------|-------|------|------|-------|------|------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 51.37 | 5.15 | 5.14 | 47.28 | 4.05 | 4.04 | 40.58 | 46.35 | 46.35 | 42.44 | 42.11 | 42.11 |
| Movement LOS                    | D     | A    | A    | D     | A    | A    | D     | D     | D     | D     | D     | D     |
| d_A, Approach Delay [s/veh]     | 7.44  |      |      | 5.97  |      |      | 45.97 |       |       | 42.28 |       |       |
| Approach LOS                    | A     |      |      | A     |      |      | D     |       |       | D     |       |       |
| d_I, Intersection Delay [s/veh] | 8.46  |      |      |       |      |      |       |       |       |       |       |       |
| Intersection LOS                | A     |      |      |       |      |      |       |       |       |       |       |       |
| Intersection V/C                | 0.510 |      |      |       |      |      |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 34.68 |  |  | 34.68 |  |  | 34.68 |  |  | 34.68 |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 3.067 |  |  | 3.003 |  |  | 1.978 |  |  | 1.975 |  |  |
| Crosswalk LOS  | C     |  |  | C     |  |  | A     |  |  | A     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1044  |  |  | 978   |  |  | 555   |  |  | 555   |  |  |
| d_b, Bicycle Delay [s]                                   | 10.28 |  |  | 11.76 |  |  | 23.48 |  |  | 23.48 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 2.842 |  |  | 2.319 |  |  | 1.659 |  |  | 1.639 |  |  |
| Bicycle LOS  | C     |  |  | B     |  |  | A     |  |  | A     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report  
Intersection 26: Rose Drive at Driveway C**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 3.1   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.443 |

**Intersection Setup**

| Name                         | Rose Drive |        | Rose Drive |        | Driveway C |        |
|------------------------------|------------|--------|------------|--------|------------|--------|
| Approach                     | Northbound |        | Southbound |        | Westbound  |        |
| Lane Configuration           | ↑          |        | ← ↑        |        | ←↑         |        |
| Turning Movement             | Thru       | Right  | Left       | Thru   | Left       | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00      | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 1          | 0      | 0          | 1      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00     | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0          | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00       | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 40.00      |        | 40.00      |        | 25.00      |        |
| Grade [%]                    | 0.00       |        | 0.00       |        | 0.00       |        |
| Curb Present                 | No         |        | No         |        | No         |        |
| Crosswalk                    | No         |        | Yes        |        | Yes        |        |

**Volumes**

| Name  | Rose Drive |        | Rose Drive |        | Driveway C |        |
|---|------------|--------|------------|--------|------------|--------|
|   |            |        |            |        |            |        |
| Base Volume Input [veh/h]                   | 1412       | 47     | 75         | 1250   | 28         | 44     |
| Base Volume Adjustment Factor               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00       | 2.00   | 2.00       | 2.00   | 2.00       | 2.00   |
| Growth Factor                               | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                   | 0          | 0      | 0          | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                | 0          | 0      | 0          | 0      | 0          | 0      |
| Diverted Trips [veh/h]                      | 0          | 0      | 0          | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                       | 0          | 0      | 0          | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0          | 0      | 0          | 0      | 0          | 0      |
| Other Volume [veh/h]                        | 0          | 0      | 0          | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]            | 0          | 0      | 0          | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                 | 1412       | 47     | 75         | 1250   | 28         | 44     |
| Peak Hour Factor                            | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                     | 1.0000     | 1.0000 | 1.0000     | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 353        | 12     | 19         | 313    | 7          | 11     |
| Total Analysis Volume [veh/h]               | 1412       | 47     | 75         | 1250   | 28         | 44     |
| Presence of On-Street Parking               | No         | No     | No         | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]        | 0          | 0      | 0          | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                | 0          | 0      | 0          | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing in | 0          |        | 0          |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing   | 0          |        | 0          |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0          |        | 0          |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0          |        | 0          |        | 0          |        |
| Bicycle Volume [bicycles/h]                 | 0          |        | 0          |        | 0          |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 100                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 8.00                                  |

**Phasing & Timing**

| Control Type                 | Permissive | Permissive | Permissive | Permissive | Split | Split |
|------------------------------|------------|------------|------------|------------|-------|-------|
| Signal Group                 | 6          | 0          | 0          | 2          | 7     | 0     |
| Auxiliary Signal Groups      |            |            |            |            |       |       |
| Lead / Lag                   | -          | -          | -          | -          | Lead  | -     |
| Minimum Green [s]            | 6          | 0          | 0          | 6          | 6     | 0     |
| Maximum Green [s]            | 30         | 0          | 0          | 30         | 30    | 0     |
| Amber [s]                    | 3.0        | 0.0        | 0.0        | 3.0        | 3.0   | 0.0   |
| All red [s]                  | 1.0        | 0.0        | 0.0        | 1.0        | 1.0   | 0.0   |
| Split [s]                    | 71         | 0          | 0          | 71         | 29    | 0     |
| Vehicle Extension [s]        | 3.0        | 0.0        | 0.0        | 3.0        | 3.0   | 0.0   |
| Walk [s]                     | 7          | 0          | 0          | 0          | 7     | 0     |
| Pedestrian Clearance [s]     | 11         | 0          | 0          | 0          | 18    | 0     |
| Delayed Vehicle Green [s]    | 0.0        | 0.0        | 0.0        | 0.0        | 0.0   | 0.0   |
| Rest In Walk                 | No         |            |            | No         | No    |       |
| I1, Start-Up Lost Time [s]   | 2.0        | 0.0        | 0.0        | 2.0        | 2.0   | 0.0   |
| I2, Clearance Lost Time [s]  | 2.0        | 0.0        | 0.0        | 2.0        | 2.0   | 0.0   |
| Minimum Recall               | No         |            |            | No         | No    |       |
| Maximum Recall               | No         |            |            | No         | No    |       |
| Pedestrian Recall            | No         |            |            | No         | No    |       |
| Detector Location [ft]       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0   | 0.0   |
| Detector Length [ft]         | 0.0        | 0.0        | 0.0        | 0.0        | 0.0   | 0.0   |
| I, Upstream Filtering Factor | 1.00       | 1.00       | 1.00       | 1.00       | 1.00  | 1.00  |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | C    | C    | L    | C    | L     | R     |
|---|------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 100  | 100  | 100  | 100  | 100   | 100   |
| L, Total Lost Time per Cycle [s]        | 4.00 | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00 | 0.00 | 2.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00 | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 87   | 87   | 87   | 87   | 5     | 5     |
| g / C, Green / Cycle                    | 0.87 | 0.87 | 0.87 | 0.87 | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.38 | 0.38 | 0.04 | 0.33 | 0.02  | 0.02  |
| s, saturation flow rate [veh/h]         | 1900 | 1900 | 1800 | 3800 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 1649 | 1649 | 1437 | 3297 | 94    | 99    |
| d1, Uniform Delay [s]                   | 1.42 | 1.42 | 0.91 | 1.30 | 45.59 | 45.94 |
| k, delay calibration                    | 0.50 | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.86 | 0.86 | 0.07 | 0.33 | 1.74  | 3.07  |
| d3, Initial Queue Delay [s]             | 0.00 | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |      |       |       |       |
|---------------------------------------|-------|-------|------|-------|-------|-------|
| X, volume / capacity                  | 0.44  | 0.44  | 0.05 | 0.38  | 0.30  | 0.44  |
| d, Delay for Lane Group [s/veh]       | 2.28  | 2.28  | 0.98 | 1.64  | 47.32 | 49.01 |
| Lane Group LOS                        | A     | A     | A    | A     | D     | D     |
| Critical Lane Group                   | Yes   | No    | No   | No    | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.79  | 0.79  | 0.05 | 0.46  | 0.72  | 1.15  |
| 50th-Percentile Queue Length [ft/ln]  | 19.69 | 19.69 | 1.34 | 11.52 | 17.96 | 28.77 |
| 95th-Percentile Queue Length [veh/ln] | 1.42  | 1.42  | 0.10 | 0.83  | 1.29  | 2.07  |
| 95th-Percentile Queue Length [ft/ln]  | 35.44 | 35.44 | 2.40 | 20.74 | 32.33 | 51.78 |



**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 2.28  | 2.28 | 0.98 | 1.64 | 47.32 | 49.01 |
| Movement LOS                    | A     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 2.28  |      | 1.60 |      | 48.36 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 3.13  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.443 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 0.0   | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 0.00  | 39.59 | 39.59 |
| I_p,int, Pedestrian LOS Score for Intersection           | 0.000 | 3.028 | 2.104 |
| Crosswalk LOS  | F     | C     | B     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1340  | 1340  | 500   |
| d_b, Bicycle Delay [s]                                   | 5.44  | 5.44  | 28.11 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.763 | 2.653 | 1.560 |
| Bicycle LOS  | C     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



*APPENDIX H-IV*

**YEAR 2045 PLUS PROJECT WITH MITIGATION  
TRAFFIC CONDITIONS**

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**APPENDIX I**  
**PROJECT DRIVEWAY B PHASED ANALYSIS**

*APPENDIX I-I*

**ZONE 2 ONLY (TRAFFIC SIGNAL) - ICU**

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.698 |

**Intersection Setup**

| Name                         | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|------------------------------|-----------------|--------|-----------------|--------|------------|--------|
| Approach                     | Northbound      |        | Southbound      |        | Eastbound  |        |
| Lane Configuration           | ⇐               |        | ⇐               |        | ⇐⇐         |        |
| Turning Movement             | Left            | Thru   | Thru            | Right  | Left       | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00           | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1               | 0      | 1          | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00          | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0               | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00            | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 30.00           |        | 30.00           |        | 30.00      |        |
| Grade [%]                    | 0.00            |        | 0.00            |        | 0.00       |        |
| Crosswalk                    | Yes             |        | No              |        | Yes        |        |

**Volumes**

| Name                                    | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 33              | 673    | 1992            | 2      | 3          | 71     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 33              | 673    | 1992            | 2      | 3          | 71     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8               | 168    | 498             | 1      | 1          | 18     |
| Total Analysis Volume [veh/h]           | 33              | 673    | 1992            | 2      | 3          | 71     |
| Pedestrian Volume [ped/h]               | 0               |        | 0               |        | 0          |        |
| Bicycle Volume [bicycles/h]             | 0               |        | 0               |        | 0          |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |           |            |            |            |            |            |
|-------------------------|-----------|------------|------------|------------|------------|------------|
| Control Type            | Protected | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 1         | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |           |            |            |            |            |            |
| Lead / Lag              | Lead      | -          | -          | -          | Lead       | -          |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.20 | 0.59 | 0.59 | 0.00 | 0.04 |
| Intersection LOS        | B     |      |      |      |      |      |
| Intersection V/C        | 0.698 |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.482 |

**Intersection Setup**

| Name                         | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|------------------------------|-----------------|--------|-----------------|--------|------------|--------|
| Approach                     | Northbound      |        | Southbound      |        | Eastbound  |        |
| Lane Configuration           |                 |        |                 |        |            |        |
| Turning Movement             | Left            | Thru   | Thru            | Right  | Left       | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00           | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1               | 0      | 1          | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00          | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0               | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00            | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 30.00           |        | 30.00           |        | 30.00      |        |
| Grade [%]                    | 0.00            |        | 0.00            |        | 0.00       |        |
| Crosswalk                    | Yes             |        | No              |        | Yes        |        |

**Volumes**

| Name                                    | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 77              | 1356   | 809             | 6      | 4          | 56     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 77              | 1356   | 809             | 6      | 4          | 56     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 19              | 339    | 202             | 2      | 1          | 14     |
| Total Analysis Volume [veh/h]           | 77              | 1356   | 809             | 6      | 4          | 56     |
| Pedestrian Volume [ped/h]               | 0               |        | 0               |        | 0          |        |
| Bicycle Volume [bicycles/h]             | 0               |        | 0               |        | 0          |        |



Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |           |            |            |            |            |            |
|-------------------------|-----------|------------|------------|------------|------------|------------|
| Control Type            | Protected | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 1         | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |           |            |            |            |            |            |
| Lead / Lag              | Lead      | -          | -          | -          | Lead       | -          |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.40 | 0.24 | 0.24 | 0.00 | 0.03 |
| Intersection LOS        | A     |      |      |      |      |      |
| Intersection V/C        | 0.482 |      |      |      |      |      |

*APPENDIX I-II*

**ZONE 2 ONLY (TRAFFIC SIGNAL) - ICU**

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | C     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.727 |

**Intersection Setup**

| Name                         | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|------------------------------|-----------------|--------|-----------------|--------|------------|--------|
| Approach                     | Northbound      |        | Southbound      |        | Eastbound  |        |
| Lane Configuration           | ⇐               |        | ⇐               |        | ⇐⇐         |        |
| Turning Movement             | Left            | Thru   | Thru            | Right  | Left       | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00           | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1               | 0      | 1          | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00          | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0               | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00            | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 30.00           |        | 30.00           |        | 30.00      |        |
| Grade [%]                    | 0.00            |        | 0.00            |        | 0.00       |        |
| Crosswalk                    | Yes             |        | No              |        | Yes        |        |

**Volumes**

| Name                                    | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 33              | 705    | 2091            | 2      | 3          | 71     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 33              | 705    | 2091            | 2      | 3          | 71     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8               | 176    | 523             | 1      | 1          | 18     |
| Total Analysis Volume [veh/h]           | 33              | 705    | 2091            | 2      | 3          | 71     |
| Pedestrian Volume [ped/h]               | 0               |        | 0               |        | 0          |        |
| Bicycle Volume [bicycles/h]             | 0               |        | 0               |        | 0          |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |           |            |            |            |            |            |
|-------------------------|-----------|------------|------------|------------|------------|------------|
| Control Type            | Protected | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 1         | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |           |            |            |            |            |            |
| Lead / Lag              | Lead      | -          | -          | -          | Lead       | -          |




**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.21 | 0.62 | 0.62 | 0.00 | 0.04 |
| Intersection LOS        | C     |      |      |      |      |      |
| Intersection V/C        | 0.727 |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.501 |

**Intersection Setup**

| Name                         | Valencia Avenue   |        | Valencia Avenue  |        | Driveway B  |        |
|------------------------------|---|--------|--|--------|---|--------|
| Approach                     | Northbound  |        | Southbound   |        | Eastbound   |        |
| Lane Configuration           |  |        |  |        |  |        |
| Turning Movement             | Left  | Thru   | Thru   | Right  | Left  | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00  | 12.00   | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1  | 0      | 1   | 0      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00   | 100.00 | 100.00  | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0  | 0      | 0   | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   |
| Speed [mph]                  | 30.00   |        | 30.00  |        | 30.00   |        |
| Grade [%]                    | 0.00  |        | 0.00   |        | 0.00  |        |
| Crosswalk                    | Yes   |        | No   |        | Yes   |        |

**Volumes**

| Name                                    | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 77              | 1422   | 849             | 6      | 4          | 56     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 77              | 1422   | 849             | 6      | 4          | 56     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 19              | 356    | 212             | 2      | 1          | 14     |
| Total Analysis Volume [veh/h]           | 77              | 1422   | 849             | 6      | 4          | 56     |
| Pedestrian Volume [ped/h]               | 0               |        | 0               |        | 0          |        |
| Bicycle Volume [bicycles/h]             | 0               |        | 0               |        | 0          |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

|                         |           |            |            |            |            |            |
|-------------------------|-----------|------------|------------|------------|------------|------------|
| Control Type            | Protected | Permissive | Permissive | Permissive | Permissive | Permissive |
| Signal Group            | 1         | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups |           |            |            |            |            |            |
| Lead / Lag              | Lead      | -          | -          | -          | Lead       | -          |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.05  | 0.42 | 0.25 | 0.25 | 0.00 | 0.03 |
| Intersection LOS        | A     |      |      |      |      |      |
| Intersection V/C        | 0.501 |      |      |      |      |      |

*APPENDIX I-III*

**ZONES 2 AND 3 (TRAFFIC SIGNAL) - ICU**

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

SEE APPENDIX G



*APPENDIX I-IV*

**ZONES 2 AND 3 (TRAFFIC SIGNAL) - ICU**

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**

SEE APPENDIX G

*APPENDIX I-V*

**ZONE 2 ONLY (ONE-WAY STOP CONTROL) - HCM**

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 169.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.121 |

**Intersection Setup**

| Name                         | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|------------------------------|-----------------|--------|-----------------|--------|------------|--------|
| Approach                     | Northbound      |        | Southbound      |        | Eastbound  |        |
| Lane Configuration           | ↵ ↑             |        | ↑ ↵             |        | ↵↵         |        |
| Turning Movement             | Left            | Thru   | Thru            | Right  | Left       | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00           | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1               | 0      | 1          | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00          | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0               | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00            | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 45.00           |        | 45.00           |        | 25.00      |        |
| Grade [%]                    | 0.00            |        | 0.00            |        | 0.00       |        |
| Crosswalk                    | No              |        | No              |        | Yes        |        |

**Volumes**

| Name                                    | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 33              | 673    | 1992            | 2      | 3          | 71     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 33              | 673    | 1992            | 2      | 3          | 71     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8               | 168    | 498             | 1      | 1          | 18     |
| Total Analysis Volume [veh/h]           | 33              | 673    | 1992            | 2      | 3          | 71     |
| Pedestrian Volume [ped/h]               | 0               |        | 0               |        | 0          |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                                    |      |      |      |
|------------------------------------|------|------|------|
| Priority Scheme                    | Free | Free | Stop |
| Flared Lane                        |      |      |      |
| Storage Area [veh]                 | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | No   |
| Number of Storage Spaces in Median | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |       |      |      |      |        |       |
|---------------------------------------|-------|------|------|------|--------|-------|
| V/C, Movement V/C Ratio               | 0.12  | 0.01 | 0.02 | 0.00 | 0.12   | 0.29  |
| d_M, Delay for Movement [s/veh]       | 19.31 | 0.00 | 0.00 | 0.00 | 169.81 | 25.86 |
| Movement LOS                          | C     | A    | A    | A    | F      | D     |
| 95th-Percentile Queue Length [veh/ln] | 0.39  | 0.00 | 0.00 | 0.00 | 0.37   | 1.18  |
| 95th-Percentile Queue Length [ft/ln]  | 9.72  | 0.00 | 0.00 | 0.00 | 9.13   | 29.42 |
| d_A, Approach Delay [s/veh]           | 0.90  |      | 0.00 |      | 31.70  |       |
| Approach LOS                          | A     |      | A    |      | D      |       |
| d_I, Intersection Delay [s/veh]       | 1.08  |      |      |      |        |       |
| Intersection LOS                      | F     |      |      |      |        |       |

**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 51.2  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.049 |

**Intersection Setup**

| Name                         | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|------------------------------|-----------------|--------|-----------------|--------|------------|--------|
| Approach                     | Northbound      |        | Southbound      |        | Eastbound  |        |
| Lane Configuration           | ↵↵              |        | ↵↵              |        | ↵↵         |        |
| Turning Movement             | Left            | Thru   | Thru            | Right  | Left       | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00           | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1               | 0      | 1          | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00          | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0               | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00            | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 45.00           |        | 45.00           |        | 25.00      |        |
| Grade [%]                    | 0.00            |        | 0.00            |        | 0.00       |        |
| Crosswalk                    | No              |        | No              |        | Yes        |        |

**Volumes**

| Name                                    | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 77              | 1356   | 809             | 6      | 4          | 56     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 77              | 1356   | 809             | 6      | 4          | 56     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 19              | 339    | 202             | 2      | 1          | 14     |
| Total Analysis Volume [veh/h]           | 77              | 1356   | 809             | 6      | 4          | 56     |
| Pedestrian Volume [ped/h]               | 0               |        | 0               |        | 0          |        |

**Intersection Settings**

|                                    |      |      |      |
|------------------------------------|------|------|------|
| Priority Scheme                    | Free | Free | Stop |
| Flared Lane                        |      |      |      |
| Storage Area [veh]                 | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | No   |
| Number of Storage Spaces in Median | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |      |      |      |      |       |       |
|---------------------------------------|------|------|------|------|-------|-------|
| V/C, Movement V/C Ratio               | 0.10 | 0.01 | 0.01 | 0.00 | 0.05  | 0.09  |
| d_M, Delay for Movement [s/veh]       | 9.92 | 0.00 | 0.00 | 0.00 | 51.24 | 11.70 |
| Movement LOS                          | A    | A    | A    | A    | F     | B     |
| 95th-Percentile Queue Length [veh/ln] | 0.31 | 0.00 | 0.00 | 0.00 | 0.15  | 0.31  |
| 95th-Percentile Queue Length [ft/ln]  | 7.87 | 0.00 | 0.00 | 0.00 | 3.80  | 7.79  |
| d_A, Approach Delay [s/veh]           | 0.53 |      | 0.00 |      | 14.34 |       |
| Approach LOS                          | A    |      | A    |      | B     |       |
| d_I, Intersection Delay [s/veh]       | 0.70 |      |      |      |       |       |
| Intersection LOS                      | F    |      |      |      |       |       |

*APPENDIX I-VI*

**ZONE 2 ONLY (ONE-WAY STOP CONTROL) - HCM**

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**



**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 210.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.148 |

**Intersection Setup**

| Name                         | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|------------------------------|-----------------|--------|-----------------|--------|------------|--------|
| Approach                     | Northbound      |        | Southbound      |        | Eastbound  |        |
| Lane Configuration           | ⇐               |        | ⇐               |        | ⇐⇐         |        |
| Turning Movement             | Left            | Thru   | Thru            | Right  | Left       | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00           | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1               | 0      | 1          | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00          | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0               | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00            | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 45.00           |        | 45.00           |        | 25.00      |        |
| Grade [%]                    | 0.00            |        | 0.00            |        | 0.00       |        |
| Crosswalk                    | No              |        | No              |        | Yes        |        |

**Volumes**

| Name                                    | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 33              | 705    | 2091            | 2      | 3          | 71     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 33              | 705    | 2091            | 2      | 3          | 71     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8               | 176    | 523             | 1      | 1          | 18     |
| Total Analysis Volume [veh/h]           | 33              | 705    | 2091            | 2      | 3          | 71     |
| Pedestrian Volume [ped/h]               | 0               |        | 0               |        | 0          |        |

Version 2021 (SP 0-6)

**Intersection Settings**

|                                    |      |      |      |
|------------------------------------|------|------|------|
| Priority Scheme                    | Free | Free | Stop |
| Flared Lane                        |      |      |      |
| Storage Area [veh]                 | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | No   |
| Number of Storage Spaces in Median | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |       |      |      |      |        |       |
|---------------------------------------|-------|------|------|------|--------|-------|
| V/C, Movement V/C Ratio               | 0.13  | 0.01 | 0.02 | 0.00 | 0.15   | 0.32  |
| d_M, Delay for Movement [s/veh]       | 20.84 | 0.00 | 0.00 | 0.00 | 210.54 | 28.23 |
| Movement LOS                          | C     | A    | A    | A    | F      | D     |
| 95th-Percentile Queue Length [veh/ln] | 0.43  | 0.00 | 0.00 | 0.00 | 0.43   | 1.30  |
| 95th-Percentile Queue Length [ft/ln]  | 10.74 | 0.00 | 0.00 | 0.00 | 10.82  | 32.43 |
| d_A, Approach Delay [s/veh]           | 0.93  |      | 0.00 |      | 35.62  |       |
| Approach LOS                          | A     |      | A    |      | E      |       |
| d_I, Intersection Delay [s/veh]       | 1.14  |      |      |      |        |       |
| Intersection LOS                      | F     |      |      |      |        |       |

**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 57.3  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.055 |

**Intersection Setup**

| Name                         | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|------------------------------|-----------------|--------|-----------------|--------|------------|--------|
| Approach                     | Northbound      |        | Southbound      |        | Eastbound  |        |
| Lane Configuration           | ↵               |        | ↵               |        | ↵↵         |        |
| Turning Movement             | Left            | Thru   | Thru            | Right  | Left       | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00           | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1               | 0      | 1          | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00          | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0               | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00            | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 45.00           |        | 45.00           |        | 25.00      |        |
| Grade [%]                    | 0.00            |        | 0.00            |        | 0.00       |        |
| Crosswalk                    | No              |        | No              |        | Yes        |        |

**Volumes**

| Name                                    | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
| Base Volume Input [veh/h]               | 77              | 1422   | 849             | 6      | 4          | 56     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]             | 77              | 1422   | 849             | 6      | 4          | 56     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 19              | 356    | 212             | 2      | 1          | 14     |
| Total Analysis Volume [veh/h]           | 77              | 1422   | 849             | 6      | 4          | 56     |
| Pedestrian Volume [ped/h]               | 0               |        | 0               |        | 0          |        |

**Intersection Settings**

|                                    |      |      |      |
|------------------------------------|------|------|------|
| Priority Scheme                    | Free | Free | Stop |
| Flared Lane                        |      |      |      |
| Storage Area [veh]                 | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | No   |
| Number of Storage Spaces in Median | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |       |      |      |      |       |       |
|---------------------------------------|-------|------|------|------|-------|-------|
| V/C, Movement V/C Ratio               | 0.10  | 0.01 | 0.01 | 0.00 | 0.05  | 0.10  |
| d_M, Delay for Movement [s/veh]       | 10.12 | 0.00 | 0.00 | 0.00 | 57.26 | 11.93 |
| Movement LOS                          | B     | A    | A    | A    | F     | B     |
| 95th-Percentile Queue Length [veh/ln] | 0.33  | 0.00 | 0.00 | 0.00 | 0.17  | 0.32  |
| 95th-Percentile Queue Length [ft/ln]  | 8.18  | 0.00 | 0.00 | 0.00 | 4.27  | 8.04  |
| d_A, Approach Delay [s/veh]           | 0.52  |      | 0.00 |      | 14.95 |       |
| Approach LOS                          | A     |      | A    |      | B     |       |
| d_I, Intersection Delay [s/veh]       | 0.69  |      |      |      |       |       |
| Intersection LOS                      | F     |      |      |      |       |       |

*APPENDIX I-VII*




**ZONE 2 ONLY (TRAFFIC SIGNAL) - HCM**

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 7.6   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.670 |

**Intersection Setup**

| Name                         | Valencia Avenue   |        | Valencia Avenue  |        | Driveway B  |        |
|------------------------------|---|--------|--|--------|---|--------|
| Approach                     | Northbound  |        | Southbound   |        | Eastbound   |        |
| Lane Configuration           |  |        |  |        |  |        |
| Turning Movement             | Left  | Thru   | Thru   | Right  | Left  | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00  | 12.00   | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1  | 0      | 1   | 0      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00   | 100.00 | 100.00  | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0  | 0      | 0   | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   |
| Speed [mph]                  | 45.00   |        | 45.00  |        | 25.00   |        |
| Grade [%]                    | 0.00  |        | 0.00   |        | 0.00  |        |
| Curb Present                 | No  |        | No   |        | No  |        |
| Crosswalk                    | Yes   |        | No   |        | Yes   |        |

**Volumes**

| Name  | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
|   |                 |        |                 |        |            |        |
| Base Volume Input [veh/h]                   | 33              | 673    | 1992            | 2      | 3          | 71     |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0               | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                 | 33              | 673    | 1992            | 2      | 3          | 71     |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 8               | 168    | 498             | 1      | 1          | 18     |
| Total Analysis Volume [veh/h]               | 33              | 673    | 1992            | 2      | 3          | 71     |
| Presence of On-Street Parking               | No              | No     | No              | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0               | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0               | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        | 0               |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        | 0               |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        | 0               |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        | 0               |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        | 0               |        | 0          |        |
| Bicycle Volume [bicycles/h]                 | 0               |        | 0               |        | 0          |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Protected | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|-----------|------------|------------|------------|------------|------------|
| Signal Group                 | 1         | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |           |            |            |            |            |            |
| Lead / Lag                   | Lead      | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 6         | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 30        | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 3.0       | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 1.0       | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 10        | 61         | 51         | 0          | 29         | 0          |
| Vehicle Extension [s]        | 3.0       | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0         | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0         | 0          | 11         | 0          | 18         | 0          |
| Delayed Vehicle Green [s]    | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |           | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 2.0       | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 2.0       | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               | No        | No         | No         |            | No         |            |
| Maximum Recall               | No        | No         | No         |            | No         |            |
| Pedestrian Recall            | No        | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00      | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C    | C    | C    | L     | R     |
|---|-------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90   | 90   | 90   | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 3     | 77   | 69   | 69   | 5     | 5     |
| g / C, Green / Cycle                    | 0.04  | 0.85 | 0.77 | 0.77 | 0.06  | 0.06  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02  | 0.18 | 0.52 | 0.52 | 0.00  | 0.04  |
| s, saturation flow rate [veh/h]         | 1800  | 3800 | 1900 | 1900 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 70    | 3245 | 1464 | 1464 | 103   | 109   |
| d1, Uniform Delay [s]                   | 42.39 | 1.17 | 4.98 | 4.98 | 40.08 | 41.56 |
| k, delay calibration                    | 0.11  | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 4.93  | 0.15 | 2.58 | 2.58 | 0.11  | 6.43  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |      |        |        |       |       |
|---------------------------------------|-------|------|--------|--------|-------|-------|
| X, volume / capacity                  | 0.47  | 0.21 | 0.68   | 0.68   | 0.03  | 0.65  |
| d, Delay for Lane Group [s/veh]       | 47.32 | 1.31 | 7.55   | 7.55   | 40.19 | 47.99 |
| Lane Group LOS                        | D     | A    | A      | A      | D     | D     |
| Critical Lane Group                   | Yes   | No   | Yes    | No     | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.78  | 0.10 | 5.54   | 5.54   | 0.07  | 1.74  |
| 50th-Percentile Queue Length [ft/ln]  | 19.60 | 2.41 | 138.39 | 138.39 | 1.65  | 43.45 |
| 95th-Percentile Queue Length [veh/ln] | 1.41  | 0.17 | 9.39   | 9.39   | 0.12  | 3.13  |
| 95th-Percentile Queue Length [ft/ln]  | 35.29 | 4.35 | 234.85 | 234.85 | 2.98  | 78.22 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 47.32 | 1.31 | 7.55 | 7.55 | 40.19 | 47.99 |
| Movement LOS                    | D     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 3.46  |      | 7.55 |      | 47.68 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 7.58  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.670 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 0.00  | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 3.109 | 0.000 | 1.969 |
| Crosswalk LOS  | C     | F     | A     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1266  | 1044  | 555   |
| d_b, Bicycle Delay [s]                                   | 6.06  | 10.28 | 23.48 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.142 | 3.205 | 1.560 |
| Bicycle LOS  | B     | C     | A     |

**Sequence**




|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.3   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.446 |

**Intersection Setup**

| Name                         | Valencia Avenue   |        | Valencia Avenue  |        | Driveway B  |        |
|------------------------------|---|--------|--|--------|---|--------|
| Approach                     | Northbound  |        | Southbound   |        | Eastbound   |        |
| Lane Configuration           |  |        |  |        |  |        |
| Turning Movement             | Left  | Thru   | Thru   | Right  | Left  | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00  | 12.00   | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1  | 0      | 1   | 0      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00   | 100.00 | 100.00  | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0  | 0      | 0   | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00   | 0.00  | 0.00   |
| Speed [mph]                  | 45.00   |        | 45.00  |        | 25.00   |        |
| Grade [%]                    | 0.00  |        | 0.00   |        | 0.00  |        |
| Curb Present                 | No  |        | No   |        | No  |        |
| Crosswalk                    | Yes   |        | No   |        | Yes   |        |

**Volumes**

| Name  | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
|   |                 |        |                 |        |            |        |
| Base Volume Input [veh/h]                   | 77              | 1356   | 809             | 6      | 4          | 56     |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0               | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                 | 77              | 1356   | 809             | 6      | 4          | 56     |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 19              | 339    | 202             | 2      | 1          | 14     |
| Total Analysis Volume [veh/h]               | 77              | 1356   | 809             | 6      | 4          | 56     |
| Presence of On-Street Parking               | No              | No     | No              | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0               | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0               | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        | 0               |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        | 0               |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        | 0               |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        | 0               |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        | 0               |        | 0          |        |
| Bicycle Volume [bicycles/h]                 | 0               |        | 0               |        | 0          |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Protected | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|-----------|------------|------------|------------|------------|------------|
| Signal Group                 | 1         | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |           |            |            |            |            |            |
| Lead / Lag                   | Lead      | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 6         | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 30        | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 3.0       | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 1.0       | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 11        | 61         | 50         | 0          | 29         | 0          |
| Vehicle Extension [s]        | 3.0       | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0         | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0         | 0          | 11         | 0          | 18         | 0          |
| Delayed Vehicle Green [s]    | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |           | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 2.0       | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 2.0       | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               | No        | No         | No         |            | No         |            |
| Maximum Recall               | No        | No         | No         |            | No         |            |
| Pedestrian Recall            | No        | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00      | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C    | C    | C    | L     | R     |
|---|-------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90   | 90   | 90   | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 5     | 77   | 68   | 68   | 5     | 5     |
| g / C, Green / Cycle                    | 0.06  | 0.86 | 0.76 | 0.76 | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.36 | 0.21 | 0.21 | 0.00  | 0.03  |
| s, saturation flow rate [veh/h]         | 1800  | 3800 | 1900 | 1900 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 105   | 3261 | 1436 | 1436 | 95    | 101   |
| d1, Uniform Delay [s]                   | 41.73 | 1.41 | 3.42 | 3.42 | 40.47 | 41.61 |
| k, delay calibration                    | 0.11  | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.63  | 0.39 | 0.50 | 0.50 | 0.18  | 4.74  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |      |       |       |       |       |
|---------------------------------------|-------|------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.74  | 0.42 | 0.28  | 0.28  | 0.04  | 0.56  |
| d, Delay for Lane Group [s/veh]       | 51.37 | 1.80 | 3.92  | 3.92  | 40.65 | 46.35 |
| Lane Group LOS                        | D     | A    | A     | A     | D     | D     |
| Critical Lane Group                   | No    | Yes  | No    | No    | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 1.89  | 0.18 | 1.50  | 1.50  | 0.09  | 1.35  |
| 50th-Percentile Queue Length [ft/ln]  | 47.22 | 4.44 | 37.57 | 37.57 | 2.23  | 33.66 |
| 95th-Percentile Queue Length [veh/ln] | 3.40  | 0.32 | 2.71  | 2.71  | 0.16  | 2.42  |
| 95th-Percentile Queue Length [ft/ln]  | 85.00 | 8.00 | 67.63 | 67.63 | 4.01  | 60.59 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 51.37 | 1.80 | 3.92 | 3.92 | 40.65 | 46.35 |
| Movement LOS                    | D     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 4.46  |      | 3.92 |      | 45.97 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 5.35  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.446 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 0.00  | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.972 | 0.000 | 1.978 |
| Crosswalk LOS  | C     | F     | A     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1266  | 1022  | 555   |
| d_b, Bicycle Delay [s]                                   | 6.06  | 10.76 | 23.48 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.742 | 2.232 | 1.560 |
| Bicycle LOS  | B     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



*APPENDIX I-VIII*

**ZONE 2 ONLY (TRAFFIC SIGNAL) - HCM**

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**



**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 7.9   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.694 |

**Intersection Setup**

| Name                         | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|------------------------------|-----------------|--------|-----------------|--------|------------|--------|
| Approach                     | Northbound      |        | Southbound      |        | Eastbound  |        |
| Lane Configuration           | ↵               |        | ↵               |        | ↵↵         |        |
| Turning Movement             | Left            | Thru   | Thru            | Right  | Left       | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00           | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1               | 0      | 1          | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00          | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0               | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00            | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 45.00           |        | 45.00           |        | 25.00      |        |
| Grade [%]                    | 0.00            |        | 0.00            |        | 0.00       |        |
| Curb Present                 | No              |        | No              |        | No         |        |
| Crosswalk                    | Yes             |        | No              |        | Yes        |        |

**Volumes**

| Name  | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
|   |                 |        |                 |        |            |        |
| Base Volume Input [veh/h]                   | 33              | 705    | 2091            | 2      | 3          | 71     |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0               | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                 | 33              | 705    | 2091            | 2      | 3          | 71     |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 8               | 176    | 523             | 1      | 1          | 18     |
| Total Analysis Volume [veh/h]               | 33              | 705    | 2091            | 2      | 3          | 71     |
| Presence of On-Street Parking               | No              | No     | No              | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0               | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0               | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        | 0               |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        | 0               |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        | 0               |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        | 0               |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        | 0               |        | 0          |        |
| Bicycle Volume [bicycles/h]                 | 0               |        | 0               |        | 0          |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Protected | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|-----------|------------|------------|------------|------------|------------|
| Signal Group                 | 1         | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |           |            |            |            |            |            |
| Lead / Lag                   | Lead      | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 6         | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 30        | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 3.0       | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 1.0       | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 10        | 66         | 56         | 0          | 29         | 0          |
| Vehicle Extension [s]        | 3.0       | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0         | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0         | 0          | 11         | 0          | 18         | 0          |
| Delayed Vehicle Green [s]    | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |           | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 2.0       | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 2.0       | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               | No        | No         | No         |            | No         |            |
| Maximum Recall               | No        | No         | No         |            | No         |            |
| Pedestrian Recall            | No        | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00      | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C    | C    | C    | L     | R     |
|---|-------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 95    | 95   | 95   | 95   | 95    | 95    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4     | 82   | 74   | 74   | 5     | 5     |
| g / C, Green / Cycle                    | 0.04  | 0.86 | 0.78 | 0.78 | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.02  | 0.19 | 0.55 | 0.55 | 0.00  | 0.04  |
| s, saturation flow rate [veh/h]         | 1800  | 3800 | 1900 | 1900 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 67    | 3272 | 1485 | 1485 | 98    | 104   |
| d1, Uniform Delay [s]                   | 44.85 | 1.13 | 5.04 | 5.04 | 42.52 | 44.10 |
| k, delay calibration                    | 0.11  | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 5.47  | 0.15 | 2.83 | 2.83 | 0.12  | 7.65  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |      |        |        |       |       |
|---------------------------------------|-------|------|--------|--------|-------|-------|
| X, volume / capacity                  | 0.49  | 0.22 | 0.70   | 0.70   | 0.03  | 0.68  |
| d, Delay for Lane Group [s/veh]       | 50.33 | 1.28 | 7.87   | 7.87   | 42.64 | 51.74 |
| Lane Group LOS                        | D     | A    | A      | A      | D     | D     |
| Critical Lane Group                   | Yes   | No   | Yes    | No     | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 0.84  | 0.11 | 6.25   | 6.25   | 0.07  | 1.87  |
| 50th-Percentile Queue Length [ft/ln]  | 20.91 | 2.74 | 156.28 | 156.28 | 1.76  | 46.63 |
| 95th-Percentile Queue Length [veh/ln] | 1.51  | 0.20 | 10.35  | 10.35  | 0.13  | 3.36  |
| 95th-Percentile Queue Length [ft/ln]  | 37.64 | 4.93 | 258.79 | 258.79 | 3.17  | 83.94 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 50.33 | 1.28 | 7.87 | 7.87 | 42.64 | 51.74 |
| Movement LOS                    | D     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 3.47  |      | 7.87 |      | 51.38 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 7.86  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.694 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.14 | 0.00  | 37.14 |
| I_p,int, Pedestrian LOS Score for Intersection           | 3.150 | 0.000 | 1.972 |
| Crosswalk LOS  | C     | F     | A     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1305  | 1095  | 526   |
| d_b, Bicycle Delay [s]                                   | 5.73  | 9.73  | 25.79 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.168 | 3.286 | 1.560 |
| Bicycle LOS  | B     | C     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 5.3   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.466 |

**Intersection Setup**

| Name                         | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|------------------------------|-----------------|--------|-----------------|--------|------------|--------|
| Approach                     | Northbound      |        | Southbound      |        | Eastbound  |        |
| Lane Configuration           | ↵               |        | ↵               |        | ↵↵         |        |
| Turning Movement             | Left            | Thru   | Thru            | Right  | Left       | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00           | 12.00  | 12.00      | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 1               | 0      | 1          | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00          | 100.00 | 100.00     | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0               | 0      | 0          | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00            | 0.00   | 0.00       | 0.00   |
| Speed [mph]                  | 45.00           |        | 45.00           |        | 25.00      |        |
| Grade [%]                    | 0.00            |        | 0.00            |        | 0.00       |        |
| Curb Present                 | No              |        | No              |        | No         |        |
| Crosswalk                    | Yes             |        | No              |        | Yes        |        |

**Volumes**

| Name  | Valencia Avenue |        | Valencia Avenue |        | Driveway B |        |
|---|-----------------|--------|-----------------|--------|------------|--------|
|   |                 |        |                 |        |            |        |
| Base Volume Input [veh/h]                   | 77              | 1422   | 849             | 6      | 4          | 56     |
| Base Volume Adjustment Factor               | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00            | 2.00   | 2.00            | 2.00   | 2.00       | 2.00   |
| Growth Factor                               | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| In-Process Volume [veh/h]                   | 0               | 0      | 0               | 0      | 0          | 0      |
| Site-Generated Trips [veh/h]                | 0               | 0      | 0               | 0      | 0          | 0      |
| Diverted Trips [veh/h]                      | 0               | 0      | 0               | 0      | 0          | 0      |
| Pass-by Trips [veh/h]                       | 0               | 0      | 0               | 0      | 0          | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0               | 0      | 0               | 0      | 0          | 0      |
| Other Volume [veh/h]                        | 0               | 0      | 0               | 0      | 0          | 0      |
| Right Turn on Red Volume [veh/h]            | 0               | 0      | 0               | 0      | 0          | 0      |
| Total Hourly Volume [veh/h]                 | 77              | 1422   | 849             | 6      | 4          | 56     |
| Peak Hour Factor                            | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Other Adjustment Factor                     | 1.0000          | 1.0000 | 1.0000          | 1.0000 | 1.0000     | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 19              | 356    | 212             | 2      | 1          | 14     |
| Total Analysis Volume [veh/h]               | 77              | 1422   | 849             | 6      | 4          | 56     |
| Presence of On-Street Parking               | No              | No     | No              | No     | No         | No     |
| On-Street Parking Maneuver Rate [/h]        | 0               | 0      | 0               | 0      | 0          | 0      |
| Local Bus Stopping Rate [/h]                | 0               | 0      | 0               | 0      | 0          | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0               |        | 0               |        | 0          |        |
| v_di, Inbound Pedestrian Volume crossing in | 0               |        | 0               |        | 0          |        |
| v_co, Outbound Pedestrian Volume crossing   | 0               |        | 0               |        | 0          |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0               |        | 0               |        | 0          |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0               |        | 0               |        | 0          |        |
| Bicycle Volume [bicycles/h]                 | 0               |        | 0               |        | 0          |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Protected | Permissive | Permissive | Permissive | Permissive | Permissive |
|------------------------------|-----------|------------|------------|------------|------------|------------|
| Signal Group                 | 1         | 6          | 2          | 0          | 3          | 0          |
| Auxiliary Signal Groups      |           |            |            |            |            |            |
| Lead / Lag                   | Lead      | -          | -          | -          | Lead       | -          |
| Minimum Green [s]            | 6         | 6          | 6          | 0          | 6          | 0          |
| Maximum Green [s]            | 30        | 30         | 30         | 0          | 30         | 0          |
| Amber [s]                    | 3.0       | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| All red [s]                  | 1.0       | 1.0        | 1.0        | 0.0        | 1.0        | 0.0        |
| Split [s]                    | 11        | 61         | 50         | 0          | 29         | 0          |
| Vehicle Extension [s]        | 3.0       | 3.0        | 3.0        | 0.0        | 3.0        | 0.0        |
| Walk [s]                     | 0         | 0          | 7          | 0          | 7          | 0          |
| Pedestrian Clearance [s]     | 0         | 0          | 11         | 0          | 18         | 0          |
| Delayed Vehicle Green [s]    | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Rest In Walk                 |           | No         | No         |            | No         |            |
| I1, Start-Up Lost Time [s]   | 2.0       | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| I2, Clearance Lost Time [s]  | 2.0       | 2.0        | 2.0        | 0.0        | 2.0        | 0.0        |
| Minimum Recall               | No        | No         | No         |            | No         |            |
| Maximum Recall               | No        | No         | No         |            | No         |            |
| Pedestrian Recall            | No        | No         | No         |            | No         |            |
| Detector Location [ft]       | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| Detector Length [ft]         | 0.0       | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| I, Upstream Filtering Factor | 1.00      | 1.00       | 1.00       | 1.00       | 1.00       | 1.00       |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C    | C    | C    | L     | R     |
|---|-------|------|------|------|-------|-------|
| C, Cycle Length [s]                     | 90    | 90   | 90   | 90   | 90    | 90    |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00 | 4.00 | 4.00 | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00 | 2.00 | 2.00 | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 5     | 77   | 68   | 68   | 5     | 5     |
| g / C, Green / Cycle                    | 0.06  | 0.86 | 0.76 | 0.76 | 0.05  | 0.05  |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.37 | 0.23 | 0.23 | 0.00  | 0.03  |
| s, saturation flow rate [veh/h]         | 1800  | 3800 | 1900 | 1900 | 1800  | 1900  |
| c, Capacity [veh/h]                     | 105   | 3261 | 1436 | 1436 | 95    | 101   |
| d1, Uniform Delay [s]                   | 41.73 | 1.45 | 3.47 | 3.47 | 40.47 | 41.61 |
| k, delay calibration                    | 0.11  | 0.50 | 0.50 | 0.50 | 0.11  | 0.11  |
| l, Upstream Filtering Factor            | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 9.63  | 0.43 | 0.53 | 0.53 | 0.18  | 4.74  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00 | 0.00 | 0.00 | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00 | 1.00 | 1.00 | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |      |       |       |       |       |
|---------------------------------------|-------|------|-------|-------|-------|-------|
| X, volume / capacity                  | 0.74  | 0.44 | 0.30  | 0.30  | 0.04  | 0.56  |
| d, Delay for Lane Group [s/veh]       | 51.37 | 1.87 | 4.00  | 4.00  | 40.65 | 46.35 |
| Lane Group LOS                        | D     | A    | A     | A     | D     | D     |
| Critical Lane Group                   | No    | Yes  | No    | No    | No    | Yes   |
| 50th-Percentile Queue Length [veh/ln] | 1.89  | 0.19 | 1.60  | 1.60  | 0.09  | 1.35  |
| 50th-Percentile Queue Length [ft/ln]  | 47.22 | 4.82 | 39.99 | 39.99 | 2.23  | 33.66 |
| 95th-Percentile Queue Length [veh/ln] | 3.40  | 0.35 | 2.88  | 2.88  | 0.16  | 2.42  |
| 95th-Percentile Queue Length [ft/ln]  | 85.00 | 8.68 | 71.97 | 71.97 | 4.01  | 60.59 |

**Movement, Approach, & Intersection Results**

|                                 |       |      |      |      |       |       |
|---------------------------------|-------|------|------|------|-------|-------|
| d_M, Delay for Movement [s/veh] | 51.37 | 1.87 | 4.00 | 4.00 | 40.65 | 46.35 |
| Movement LOS                    | D     | A    | A    | A    | D     | D     |
| d_A, Approach Delay [s/veh]     | 4.41  |      | 4.00 |      | 45.97 |       |
| Approach LOS                    | A     |      | A    |      | D     |       |
| d_I, Intersection Delay [s/veh] | 5.30  |      |      |      |       |       |
| Intersection LOS                | A     |      |      |      |       |       |
| Intersection V/C                | 0.466 |      |      |      |       |       |

**Other Modes**

|  |       |       |       |
|--|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 0.0   | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 0.00  | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 3.003 | 0.000 | 1.978 |
| Crosswalk LOS  | C     | F     | A     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 1266  | 1022  | 555   |
| d_b, Bicycle Delay [s]                                   | 6.06  | 10.76 | 23.48 |
| I_b,int, Bicycle LOS Score for Intersection              | 2.796 | 2.265 | 1.560 |
| Bicycle LOS  | C     | B     | A     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | - | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



*APPENDIX I-IX*

**ZONES 2 AND 3 (TWO-WAY STOP CONTROL) - HCM**

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 382.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.118 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound  |        |        | Westbound  |        |        |
| Lane Configuration           | ↵↵↵             |        |        | ↵↵↵             |        |        | ↵↵         |        |        | ↵↵         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left       | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1          | 0      | 0      | 1          | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 45.00           |        |        | 45.00           |        |        | 25.00      |        |        | 25.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00       |        |        | 0.00       |        |        |
| Crosswalk                    | No              |        |        | No              |        |        | Yes        |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 33              | 695    | 13     | 13              | 2000   | 2      | 3          | 0      | 71     | 36         | 0      | 36     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 33              | 695    | 13     | 13              | 2000   | 2      | 3          | 0      | 71     | 36         | 0      | 36     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8               | 174    | 3      | 3               | 500    | 1      | 1          | 0      | 18     | 9          | 0      | 9      |
| Total Analysis Volume [veh/h]           | 33              | 695    | 13     | 13              | 2000   | 2      | 3          | 0      | 71     | 36         | 0      | 36     |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |

**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Free | Free | Stop | Stop |
| Flared Lane                        |      |      | No   | No   |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | No   | No   |
| Number of Storage Spaces in Median | 0    | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |       |      |      |      |      |      |        |        |       |        |        |       |
|---------------------------------------|-------|------|------|------|------|------|--------|--------|-------|--------|--------|-------|
| V/C, Movement V/C Ratio               | 0.12  | 0.01 | 0.00 | 0.01 | 0.02 | 0.00 | 0.22   | 0.00   | 0.29  | 1.12   | 0.00   | 0.06  |
| d_M, Delay for Movement [s/veh]       | 19.43 | 0.00 | 0.00 | 9.12 | 0.00 | 0.00 | 328.42 | 240.13 | 26.04 | 382.01 | 232.46 | 10.94 |
| Movement LOS                          | C     | A    | A    | A    | A    | A    | F      | F      | D     | F      | F      | B     |
| 95th-Percentile Queue Length [veh/ln] | 0.39  | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.58   | 1.19   | 1.19  | 3.92   | 0.18   | 0.18  |
| 95th-Percentile Queue Length [ft/ln]  | 9.80  | 0.00 | 0.00 | 1.12 | 0.00 | 0.00 | 14.58  | 29.65  | 29.65 | 97.99  | 4.44   | 4.44  |
| d_A, Approach Delay [s/veh]           | 0.87  |      |      | 0.06 |      |      | 38.30  |        |       | 196.47 |        |       |
| Approach LOS                          | A     |      |      | A    |      |      | E      |        |       | F      |        |       |
| d_I, Intersection Delay [s/veh]       | 6.11  |      |      |      |      |      |        |        |       |        |        |       |
| Intersection LOS                      | F     |      |      |      |      |      |        |        |       |        |        |       |

**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 375.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.938 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound  |        |        | Westbound  |        |        |
| Lane Configuration           | ↵↵↵             |        |        | ↵↵↵             |        |        | ↵↵         |        |        | ↵↵         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left       | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1          | 0      | 0      | 1          | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 45.00           |        |        | 45.00           |        |        | 25.00      |        |        | 25.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00       |        |        | 0.00       |        |        |
| Crosswalk                    | No              |        |        | No              |        |        | Yes        |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 77              | 1371   | 41     | 41              | 833    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 77              | 1371   | 41     | 41              | 833    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 19              | 343    | 10     | 10              | 208    | 2      | 1          | 0      | 14     | 6          | 0      | 6      |
| Total Analysis Volume [veh/h]           | 77              | 1371   | 41     | 41              | 833    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |

**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Free | Free | Stop | Stop |
| Flared Lane                        |      |      | No   | No   |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | No   | No   |
| Number of Storage Spaces in Median | 0    | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |       |      |      |       |      |      |       |        |       |        |        |       |
|---------------------------------------|-------|------|------|-------|------|------|-------|--------|-------|--------|--------|-------|
| V/C, Movement V/C Ratio               | 0.10  | 0.01 | 0.00 | 0.09  | 0.01 | 0.00 | 0.09  | 0.00   | 0.10  | 0.94   | 0.00   | 0.06  |
| d_M, Delay for Movement [s/veh]       | 10.04 | 0.00 | 0.00 | 13.22 | 0.00 | 0.00 | 95.39 | 155.74 | 11.84 | 375.86 | 151.87 | 15.16 |
| Movement LOS                          | B     | A    | A    | B     | A    | A    | F     | F      | B     | F      | F      | C     |
| 95th-Percentile Queue Length [veh/ln] | 0.32  | 0.00 | 0.00 | 0.28  | 0.00 | 0.00 | 0.29  | 0.32   | 0.32  | 2.90   | 0.20   | 0.20  |
| 95th-Percentile Queue Length [ft/ln]  | 8.05  | 0.00 | 0.00 | 6.99  | 0.00 | 0.00 | 7.14  | 7.94   | 7.94  | 72.56  | 5.06   | 5.06  |
| d_A, Approach Delay [s/veh]           | 0.52  |      |      | 0.62  |      |      | 17.41 |        |       | 195.51 |        |       |
| Approach LOS                          | A     |      |      | A     |      |      | C     |        |       | F      |        |       |
| d_I, Intersection Delay [s/veh]       | 4.74  |      |      |       |      |      |       |        |       |        |        |       |
| Intersection LOS                      | F     |      |      |       |      |      |       |        |       |        |        |       |

*APPENDIX I-X*

**ZONES 2 AND 3 (TWO-WAY STOP CONTROL) - HCM**

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**



**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 513.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.346 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound  |        |        | Westbound  |        |        |
| Lane Configuration           | ↵↵↵             |        |        | ↵↵↵             |        |        | ↵↵         |        |        | ↵↵         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left       | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1          | 0      | 0      | 1          | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 45.00           |        |        | 45.00           |        |        | 25.00      |        |        | 25.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00       |        |        | 0.00       |        |        |
| Crosswalk                    | No              |        |        | No              |        |        | Yes        |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 33              | 727    | 13     | 13              | 2099   | 2      | 3          | 0      | 71     | 36         | 0      | 36     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 33              | 727    | 13     | 13              | 2099   | 2      | 3          | 0      | 71     | 36         | 0      | 36     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 8               | 182    | 3      | 3               | 525    | 1      | 1          | 0      | 18     | 9          | 0      | 9      |
| Total Analysis Volume [veh/h]           | 33              | 727    | 13     | 13              | 2099   | 2      | 3          | 0      | 71     | 36         | 0      | 36     |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |

**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Free | Free | Stop | Stop |
| Flared Lane                        |      |      | No   | No   |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | No   | No   |
| Number of Storage Spaces in Median | 0    | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |       |      |      |      |      |      |        |        |       |        |        |       |
|---------------------------------------|-------|------|------|------|------|------|--------|--------|-------|--------|--------|-------|
| V/C, Movement V/C Ratio               | 0.13  | 0.01 | 0.00 | 0.02 | 0.02 | 0.00 | 0.27   | 0.00   | 0.32  | 1.35   | 0.00   | 0.06  |
| d_M, Delay for Movement [s/veh]       | 20.97 | 0.00 | 0.00 | 9.24 | 0.00 | 0.00 | 423.43 | 295.28 | 28.44 | 513.26 | 285.95 | 11.09 |
| Movement LOS                          | C     | A    | A    | A    | A    | A    | F      | F      | D     | F      | F      | B     |
| 95th-Percentile Queue Length [veh/ln] | 0.43  | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.67   | 1.31   | 1.31  | 4.30   | 0.18   | 0.18  |
| 95th-Percentile Queue Length [ft/ln]  | 10.82 | 0.00 | 0.00 | 1.15 | 0.00 | 0.00 | 16.74  | 32.69  | 32.69 | 107.44 | 4.56   | 4.56  |
| d_A, Approach Delay [s/veh]           | 0.90  |      |      | 0.06 |      |      | 44.45  |        |       | 262.17 |        |       |
| Approach LOS                          | A     |      |      | A    |      |      | E      |        |       | F      |        |       |
| d_I, Intersection Delay [s/veh]       | 7.58  |      |      |      |      |      |        |        |       |        |        |       |
| Intersection LOS                      | F     |      |      |      |      |      |        |        |       |        |        |       |

**Intersection Level Of Service Report  
Intersection 25: Valencia Avenue at Driveway B**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 480.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.103 |

**Intersection Setup**

| Name                         | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|------------------------------|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Approach                     | Northbound      |        |        | Southbound      |        |        | Eastbound  |        |        | Westbound  |        |        |
| Lane Configuration           | ↵↵↵             |        |        | ↵↵↵             |        |        | ↵↵         |        |        | ↵↵         |        |        |
| Turning Movement             | Left            | Thru   | Right  | Left            | Thru   | Right  | Left       | Thru   | Right  | Left       | Thru   | Right  |
| Lane Width [ft]              | 12.00           | 12.00  | 12.00  | 12.00           | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1               | 0      | 0      | 1               | 0      | 0      | 1          | 0      | 0      | 1          | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00          | 100.00 | 100.00 | 100.00          | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00            | 0.00   | 0.00   | 0.00            | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   |
| Speed [mph]                  | 45.00           |        |        | 45.00           |        |        | 25.00      |        |        | 25.00      |        |        |
| Grade [%]                    | 0.00            |        |        | 0.00            |        |        | 0.00       |        |        | 0.00       |        |        |
| Crosswalk                    | No              |        |        | No              |        |        | Yes        |        |        | Yes        |        |        |

**Volumes**

| Name                                    | Valencia Avenue |        |        | Valencia Avenue |        |        | Driveway B |        |        | Driveway B |        |        |
|---|-----------------|--------|--------|-----------------|--------|--------|------------|--------|--------|------------|--------|--------|
| Base Volume Input [veh/h]               | 77              | 1437   | 41     | 41              | 873    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Base Volume Adjustment Factor           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00            | 2.00   | 2.00   | 2.00            | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   |
| Growth Factor                           | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Diverted Trips [veh/h]                  | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Other Volume [veh/h]                    | 0               | 0      | 0      | 0               | 0      | 0      | 0          | 0      | 0      | 0          | 0      | 0      |
| Total Hourly Volume [veh/h]             | 77              | 1437   | 41     | 41              | 873    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Peak Hour Factor                        | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000          | 1.0000 | 1.0000 | 1.0000          | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 19              | 359    | 10     | 10              | 218    | 2      | 1          | 0      | 14     | 6          | 0      | 6      |
| Total Analysis Volume [veh/h]           | 77              | 1437   | 41     | 41              | 873    | 6      | 4          | 0      | 56     | 24         | 0      | 24     |
| Pedestrian Volume [ped/h]               | 0               |        |        | 0               |        |        | 0          |        |        | 0          |        |        |

**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Free | Free | Stop | Stop |
| Flared Lane                        |      |      | No   | No   |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           |      |      | No   | No   |
| Number of Storage Spaces in Median | 0    | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |       |      |      |       |      |      |        |        |       |        |        |       |
|---------------------------------------|-------|------|------|-------|------|------|--------|--------|-------|--------|--------|-------|
| V/C, Movement V/C Ratio               | 0.10  | 0.01 | 0.00 | 0.09  | 0.01 | 0.00 | 0.10   | 0.00   | 0.10  | 1.10   | 0.00   | 0.07  |
| d_M, Delay for Movement [s/veh]       | 10.24 | 0.00 | 0.00 | 13.77 | 0.00 | 0.00 | 110.19 | 183.19 | 12.07 | 480.93 | 178.62 | 15.72 |
| Movement LOS                          | B     | A    | A    | B     | A    | A    | F      | F      | B     | F      | F      | C     |
| 95th-Percentile Queue Length [veh/ln] | 0.33  | 0.00 | 0.00 | 0.30  | 0.00 | 0.00 | 0.33   | 0.33   | 0.33  | 3.14   | 0.21   | 0.21  |
| 95th-Percentile Queue Length [ft/ln]  | 8.37  | 0.00 | 0.00 | 7.45  | 0.00 | 0.00 | 8.17   | 8.20   | 8.20  | 78.57  | 5.33   | 5.33  |
| d_A, Approach Delay [s/veh]           | 0.51  |      |      | 0.61  |      |      | 18.61  |        |       | 248.33 |        |       |
| Approach LOS                          | A     |      |      | A     |      |      | C      |        |       | F      |        |       |
| d_I, Intersection Delay [s/veh]       | 5.57  |      |      |       |      |      |        |        |       |        |        |       |
| Intersection LOS                      | F     |      |      |       |      |      |        |        |       |        |        |       |

*APPENDIX I-XI*

**ZONES 2 AND 3 (TRAFFIC SIGNAL) - HCM**

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

SEE APPENDIX H

*APPENDIX I-XII*

**ZONES 2 AND 3 (TRAFFIC SIGNAL) - HCM**

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**

SEE APPENDIX H



*APPENDIX I-XIII*

**ZONE 2 ONLY (ONE-WAY STOP CONTROL) –  
SIGNAL WARRANT**

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

## Signal Warrants Report For Intersection 25: Valencia Avenue at Driveway B

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | W    |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |
|------|---------------|------|---------------|
|      | S             | N    | W             |
| 1    | 706           | 1994 | 74            |
| 2    | 685           | 1934 | 72            |
| 3    | 671           | 1894 | 70            |
| 4    | 628           | 1775 | 66            |
| 5    | 558           | 1575 | 58            |
| 6    | 551           | 1555 | 58            |
| 7    | 544           | 1535 | 57            |
| 8    | 494           | 1396 | 52            |
| 9    | 487           | 1376 | 51            |
| 10   | 480           | 1356 | 50            |
| 11   | 417           | 1176 | 44            |
| 12   | 388           | 1097 | 41            |
| 13   | 381           | 1077 | 40            |
| 14   | 282           | 798  | 30            |
| 15   | 282           | 798  | 30            |
| 16   | 198           | 558  | 21            |
| 17   | 113           | 319  | 12            |
| 18   | 113           | 319  | 12            |
| 19   | 64            | 179  | 7             |
| 20   | 35            | 100  | 4             |
| 21   | 21            | 60   | 2             |
| 22   | 7             | 20   | 1             |
| 23   | 7             | 20   | 1             |
| 24   | 7             | 20   | 1             |

**Warrant Analysis by Hour**

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2700   | 2            | 74     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 2         | 3             | 2619   | 2            | 72     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 3         | 3             | 2565   | 2            | 70     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 4         | 3             | 2403   | 2            | 66     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 5         | 3             | 2133   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 6         | 3             | 2106   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 7         | 3             | 2079   | 2            | 57     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 8         | 3             | 1890   | 2            | 52     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 1863   | 2            | 51     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 1836   | 2            | 50     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1593   | 2            | 44     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1485   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1458   | 2            | 40     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 1080   | 2            | 30     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 1080   | 2            | 30     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 756    | 2            | 21     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 432    | 2            | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 432    | 2            | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 243    | 2            | 7      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 135    | 2            | 4      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 81     | 2            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 27     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 27     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 27     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 3   | 7   | 0         | 0                        |

**Warrant 3 Condition A**

|  |           |
|--|-----------|
| Orientation  | W         |
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 31.7      |
| Number of Lanes on Minor Street Approach                 | 2         |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 0:39      |
| Delay Condition Met                                      | No        |
| Volume on Minor Street Approach During Same Hour         | 74        |
| High Minor Volume Condition Met                          | No        |
| Total Entering Volume on All Approaches During Same Hour | 2774      |
| Number of Approaches on Intersection                     | 3         |
| Total Volume Condition Met                               | Yes       |
| Warrant Met for Approach                                 | No        |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |

## Signal Warrants Report For Intersection 25: Valencia Avenue at Driveway B

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | W    |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |     | Minor Streets |
|------|---------------|-----|---------------|
|      | S             | N   | W             |
| 1    | 1433          | 815 | 60            |
| 2    | 1390          | 791 | 58            |
| 3    | 1361          | 774 | 57            |
| 4    | 1275          | 725 | 53            |
| 5    | 1132          | 644 | 47            |
| 6    | 1118          | 636 | 47            |
| 7    | 1103          | 628 | 46            |
| 8    | 1003          | 571 | 42            |
| 9    | 989           | 562 | 41            |
| 10   | 974           | 554 | 41            |
| 11   | 845           | 481 | 35            |
| 12   | 788           | 448 | 33            |
| 13   | 774           | 440 | 32            |
| 14   | 573           | 326 | 24            |
| 15   | 573           | 326 | 24            |
| 16   | 401           | 228 | 17            |
| 17   | 229           | 130 | 10            |
| 18   | 229           | 130 | 10            |
| 19   | 129           | 73  | 5             |
| 20   | 72            | 41  | 3             |
| 21   | 43            | 24  | 2             |
| 22   | 14            | 8   | 1             |
| 23   | 14            | 8   | 1             |
| 24   | 14            | 8   | 1             |

**Warrant Analysis by Hour**

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2248   | 2            | 60     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 2         | 3             | 2181   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 3         | 3             | 2135   | 2            | 57     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 4         | 3             | 2000   | 2            | 53     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 5         | 3             | 1776   | 2            | 47     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 6         | 3             | 1754   | 2            | 47     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 7         | 3             | 1731   | 2            | 46     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 8         | 3             | 1574   | 2            | 42     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 1551   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 1528   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1326   | 2            | 35     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1236   | 2            | 33     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1214   | 2            | 32     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 899    | 2            | 24     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 899    | 2            | 24     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 629    | 2            | 17     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 359    | 2            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 359    | 2            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 202    | 2            | 5      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 113    | 2            | 3      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 67     | 2            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 22     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 22     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 22     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 0   | 3   | 0         | 0                        |

**Warrant 3 Condition A**

|  |           |
|--|-----------|
| Orientation  | W         |
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 14.3      |
| Number of Lanes on Minor Street Approach                 | 2         |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 0:14      |
| Delay Condition Met                                      | No        |
| Volume on Minor Street Approach During Same Hour         | 60        |
| High Minor Volume Condition Met                          | No        |
| Total Entering Volume on All Approaches During Same Hour | 2308      |
| Number of Approaches on Intersection                     | 3         |
| Total Volume Condition Met                               | Yes       |
| Warrant Met for Approach                                 | No        |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |

*APPENDIX I-XIV*

**ZONE 2 ONLY (ONE-WAY STOP CONTROL) –  
SIGNAL WARRANT**

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**

## Signal Warrants Report For Intersection 25: Valencia Avenue at Driveway B

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | W    |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |
|------|---------------|------|---------------|
|      | S             | N    | W             |
| 1    | 738           | 2093 | 74            |
| 2    | 716           | 2030 | 72            |
| 3    | 701           | 1988 | 70            |
| 4    | 657           | 1863 | 66            |
| 5    | 583           | 1653 | 58            |
| 6    | 576           | 1633 | 58            |
| 7    | 568           | 1612 | 57            |
| 8    | 517           | 1465 | 52            |
| 9    | 509           | 1444 | 51            |
| 10   | 502           | 1423 | 50            |
| 11   | 435           | 1235 | 44            |
| 12   | 406           | 1151 | 41            |
| 13   | 399           | 1130 | 40            |
| 14   | 295           | 837  | 30            |
| 15   | 295           | 837  | 30            |
| 16   | 207           | 586  | 21            |
| 17   | 118           | 335  | 12            |
| 18   | 118           | 335  | 12            |
| 19   | 66            | 188  | 7             |
| 20   | 37            | 105  | 4             |
| 21   | 22            | 63   | 2             |
| 22   | 7             | 21   | 1             |
| 23   | 7             | 21   | 1             |
| 24   | 7             | 21   | 1             |

**Warrant Analysis by Hour**

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2831   | 2            | 74     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 2         | 3             | 2746   | 2            | 72     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 3         | 3             | 2689   | 2            | 70     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 4         | 3             | 2520   | 2            | 66     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 5         | 3             | 2236   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 6         | 3             | 2209   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 7         | 3             | 2180   | 2            | 57     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 8         | 3             | 1982   | 2            | 52     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 1953   | 2            | 51     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 1925   | 2            | 50     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1670   | 2            | 44     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1557   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1529   | 2            | 40     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 1132   | 2            | 30     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 1132   | 2            | 30     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 793    | 2            | 21     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 453    | 2            | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 453    | 2            | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 254    | 2            | 7      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 142    | 2            | 4      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 85     | 2            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 28     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 28     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 28     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 3   | 7   | 0         | 0                        |

**Warrant 3 Condition A**

|  |           |
|--|-----------|
| Orientation  | W         |
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 35.6      |
| Number of Lanes on Minor Street Approach                 | 2         |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 0:43      |
| Delay Condition Met                                      | No        |
| Volume on Minor Street Approach During Same Hour         | 74        |
| High Minor Volume Condition Met                          | No        |
| Total Entering Volume on All Approaches During Same Hour | 2905      |
| Number of Approaches on Intersection                     | 3         |
| Total Volume Condition Met                               | Yes       |
| Warrant Met for Approach                                 | No        |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |



## Signal Warrants Report For Intersection 25: Valencia Avenue at Driveway B

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | W    |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |     | Minor Streets |
|------|---------------|-----|---------------|
|      | S             | N   | W             |
| 1    | 1499          | 855 | 60            |
| 2    | 1454          | 829 | 58            |
| 3    | 1424          | 812 | 57            |
| 4    | 1334          | 761 | 53            |
| 5    | 1184          | 675 | 47            |
| 6    | 1169          | 667 | 47            |
| 7    | 1154          | 658 | 46            |
| 8    | 1049          | 599 | 42            |
| 9    | 1034          | 590 | 41            |
| 10   | 1019          | 581 | 41            |
| 11   | 884           | 504 | 35            |
| 12   | 824           | 470 | 33            |
| 13   | 809           | 462 | 32            |
| 14   | 600           | 342 | 24            |
| 15   | 600           | 342 | 24            |
| 16   | 420           | 239 | 17            |
| 17   | 240           | 137 | 10            |
| 18   | 240           | 137 | 10            |
| 19   | 135           | 77  | 5             |
| 20   | 75            | 43  | 3             |
| 21   | 45            | 26  | 2             |
| 22   | 15            | 9   | 1             |
| 23   | 15            | 9   | 1             |
| 24   | 15            | 9   | 1             |

### Warrant Analysis by Hour

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2354   | 2            | 60     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 2         | 3             | 2283   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 3         | 3             | 2236   | 2            | 57     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 4         | 3             | 2095   | 2            | 53     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 5         | 3             | 1859   | 2            | 47     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 6         | 3             | 1836   | 2            | 47     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 7         | 3             | 1812   | 2            | 46     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 8         | 3             | 1648   | 2            | 42     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 1624   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 1600   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1388   | 2            | 35     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1294   | 2            | 33     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1271   | 2            | 32     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 942    | 2            | 24     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 942    | 2            | 24     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 659    | 2            | 17     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 377    | 2            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 377    | 2            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 212    | 2            | 5      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 118    | 2            | 3      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 71     | 2            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 24     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 24     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 24     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 0   | 3   | 0         | 0                        |

### Warrant 3 Condition A

|  |           |
|--|-----------|
| Orientation  | W         |
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 15        |
| Number of Lanes on Minor Street Approach                 | 2         |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 0:14      |
| Delay Condition Met                                      | No        |
| Volume on Minor Street Approach During Same Hour         | 60        |
| High Minor Volume Condition Met                          | No        |
| Total Entering Volume on All Approaches During Same Hour | 2414      |
| Number of Approaches on Intersection                     | 3         |
| Total Volume Condition Met                               | Yes       |
| Warrant Met for Approach                                 | No        |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |

*APPENDIX I-XV*

**ZONES 2 AND 3 (TWO-WAY STOP CONTROL) –  
SIGNAL WARRANT**

**YEAR 2035 CUMULATIVE PLUS PROJECT  
TRAFFIC CONDITIONS**

## Signal Warrants Report For Intersection 25: Valencia Avenue at Driveway B

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | E, W |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |    |
|------|---------------|------|---------------|----|
|      | S             | N    | E             | W  |
| 1    | 741           | 2015 | 72            | 74 |
| 2    | 719           | 1955 | 70            | 72 |
| 3    | 704           | 1914 | 68            | 70 |
| 4    | 659           | 1793 | 64            | 66 |
| 5    | 585           | 1592 | 57            | 58 |
| 6    | 578           | 1572 | 56            | 58 |
| 7    | 571           | 1552 | 55            | 57 |
| 8    | 519           | 1411 | 50            | 52 |
| 9    | 511           | 1390 | 50            | 51 |
| 10   | 504           | 1370 | 49            | 50 |
| 11   | 437           | 1189 | 42            | 44 |
| 12   | 408           | 1108 | 40            | 41 |
| 13   | 400           | 1088 | 39            | 40 |
| 14   | 296           | 806  | 29            | 30 |
| 15   | 296           | 806  | 29            | 30 |
| 16   | 207           | 564  | 20            | 21 |
| 17   | 119           | 322  | 12            | 12 |
| 18   | 119           | 322  | 12            | 12 |
| 19   | 67            | 181  | 6             | 7  |
| 20   | 37            | 101  | 4             | 4  |
| 21   | 22            | 60   | 2             | 2  |
| 22   | 7             | 20   | 1             | 1  |
| 23   | 7             | 20   | 1             | 1  |
| 24   | 7             | 20   | 1             | 1  |

**Warrant Analysis by Hour**

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2756   | 2            | 74     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 2         | 3             | 2674   | 2            | 72     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 3         | 3             | 2618   | 2            | 70     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 4         | 3             | 2452   | 2            | 66     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 5         | 3             | 2177   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 6         | 3             | 2150   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 7         | 3             | 2123   | 2            | 57     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 8         | 3             | 1930   | 2            | 52     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 1901   | 2            | 51     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 1874   | 2            | 50     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1626   | 2            | 44     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1516   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1488   | 2            | 40     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 1102   | 2            | 30     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 1102   | 2            | 30     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 771    | 2            | 21     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 441    | 2            | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 441    | 2            | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 248    | 2            | 7      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 138    | 2            | 4      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 82     | 2            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 27     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 27     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 27     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 3   | 7   | 0         | 0                        |

**Warrant 3 Condition A**

| Orientation  | E         | W    |
|--|-----------|------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 196.5     | 38.3 |
| Number of Lanes on Minor Street Approach                 | 2         | 2    |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 3:55      | 0:47 |
| Delay Condition Met                                      | No        | No   |
| Volume on Minor Street Approach During Same Hour         | 72        | 74   |
| High Minor Volume Condition Met                          | No        | No   |
| Total Entering Volume on All Approaches During Same Hour | 2902      | 2902 |
| Number of Approaches on Intersection                     | 4         | 4    |
| Total Volume Condition Met                               | Yes       | Yes  |
| Warrant Met for Approach                                 | No        | No   |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |      |

## Signal Warrants Report For Intersection 25: Valencia Avenue at Driveway B

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | E, W |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |     | Minor Streets |    |
|------|---------------|-----|---------------|----|
|      | S             | N   | E             | W  |
| 1    | 1489          | 880 | 48            | 60 |
| 2    | 1444          | 854 | 47            | 58 |
| 3    | 1415          | 836 | 46            | 57 |
| 4    | 1325          | 783 | 43            | 53 |
| 5    | 1176          | 695 | 38            | 47 |
| 6    | 1161          | 686 | 37            | 47 |
| 7    | 1147          | 678 | 37            | 46 |
| 8    | 1042          | 616 | 34            | 42 |
| 9    | 1027          | 607 | 33            | 41 |
| 10   | 1013          | 598 | 33            | 41 |
| 11   | 879           | 519 | 28            | 35 |
| 12   | 819           | 484 | 26            | 33 |
| 13   | 804           | 475 | 26            | 32 |
| 14   | 596           | 352 | 19            | 24 |
| 15   | 596           | 352 | 19            | 24 |
| 16   | 417           | 246 | 13            | 17 |
| 17   | 238           | 141 | 8             | 10 |
| 18   | 238           | 141 | 8             | 10 |
| 19   | 134           | 79  | 4             | 5  |
| 20   | 74            | 44  | 2             | 3  |
| 21   | 45            | 26  | 1             | 2  |
| 22   | 15            | 9   | 0             | 1  |
| 23   | 15            | 9   | 0             | 1  |
| 24   | 15            | 9   | 0             | 1  |

**Warrant Analysis by Hour**

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2369   | 2            | 60     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 2         | 3             | 2298   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 3         | 3             | 2251   | 2            | 57     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 4         | 3             | 2108   | 2            | 53     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 5         | 3             | 1871   | 2            | 47     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 6         | 3             | 1847   | 2            | 47     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 7         | 3             | 1825   | 2            | 46     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 8         | 3             | 1658   | 2            | 42     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 1634   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 1611   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1398   | 2            | 35     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1303   | 2            | 33     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1279   | 2            | 32     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 948    | 2            | 24     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 948    | 2            | 24     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 663    | 2            | 17     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 379    | 2            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 379    | 2            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 213    | 2            | 5      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 118    | 2            | 3      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 71     | 2            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 24     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 24     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 24     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 0   | 3   | 0         | 0                        |

**Warrant 3 Condition A**

| Orientation  | E         | W    |
|--|-----------|------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 195.5     | 17.4 |
| Number of Lanes on Minor Street Approach                 | 2         | 2    |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 2:36      | 0:17 |
| Delay Condition Met                                      | No        | No   |
| Volume on Minor Street Approach During Same Hour         | 48        | 60   |
| High Minor Volume Condition Met                          | No        | No   |
| Total Entering Volume on All Approaches During Same Hour | 2477      | 2477 |
| Number of Approaches on Intersection                     | 4         | 4    |
| Total Volume Condition Met                               | Yes       | Yes  |
| Warrant Met for Approach                                 | No        | No   |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |      |

*APPENDIX I-XVI*

**ZONES 2 AND 3 (TWO-WAY STOP CONTROL) –  
SIGNAL WARRANT**

**YEAR 2045 PLUS PROJECT  
TRAFFIC CONDITIONS**



## Signal Warrants Report For Intersection 25: Valencia Avenue at Driveway B

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | E, W |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |    |
|------|---------------|------|---------------|----|
|      | S             | N    | E             | W  |
| 1    | 773           | 2114 | 72            | 74 |
| 2    | 750           | 2051 | 70            | 72 |
| 3    | 734           | 2008 | 68            | 70 |
| 4    | 688           | 1881 | 64            | 66 |
| 5    | 611           | 1670 | 57            | 58 |
| 6    | 603           | 1649 | 56            | 58 |
| 7    | 595           | 1628 | 55            | 57 |
| 8    | 541           | 1480 | 50            | 52 |
| 9    | 533           | 1459 | 50            | 51 |
| 10   | 526           | 1438 | 49            | 50 |
| 11   | 456           | 1247 | 42            | 44 |
| 12   | 425           | 1163 | 40            | 41 |
| 13   | 417           | 1142 | 39            | 40 |
| 14   | 309           | 846  | 29            | 30 |
| 15   | 309           | 846  | 29            | 30 |
| 16   | 216           | 592  | 20            | 21 |
| 17   | 124           | 338  | 12            | 12 |
| 18   | 124           | 338  | 12            | 12 |
| 19   | 70            | 190  | 6             | 7  |
| 20   | 39            | 106  | 4             | 4  |
| 21   | 23            | 63   | 2             | 2  |
| 22   | 8             | 21   | 1             | 1  |
| 23   | 8             | 21   | 1             | 1  |
| 24   | 8             | 21   | 1             | 1  |

### Warrant Analysis by Hour

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2887   | 2            | 74     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 2         | 3             | 2801   | 2            | 72     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 3         | 3             | 2742   | 2            | 70     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 4         | 3             | 2569   | 2            | 66     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 5         | 3             | 2281   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 6         | 3             | 2252   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 7         | 3             | 2223   | 2            | 57     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 8         | 3             | 2021   | 2            | 52     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 1992   | 2            | 51     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 1964   | 2            | 50     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1703   | 2            | 44     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1588   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1559   | 2            | 40     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 1155   | 2            | 30     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 1155   | 2            | 30     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 808    | 2            | 21     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 462    | 2            | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 462    | 2            | 12     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 260    | 2            | 7      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 145    | 2            | 4      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 86     | 2            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 29     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 29     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 29     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 3   | 7   | 0         | 0                        |

### Warrant 3 Condition A

| Orientation  | E         | W    |
|--|-----------|------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 262.2     | 44.5 |
| Number of Lanes on Minor Street Approach                 | 2         | 2    |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 5:14      | 0:54 |
| Delay Condition Met                                      | Yes       | No   |
| Volume on Minor Street Approach During Same Hour         | 72        | 74   |
| High Minor Volume Condition Met                          | No        | No   |
| Total Entering Volume on All Approaches During Same Hour | 3033      | 3033 |
| Number of Approaches on Intersection                     | 4         | 4    |
| Total Volume Condition Met                               | Yes       | Yes  |
| Warrant Met for Approach                                 | No        | No   |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |      |

Signal Warrants Report For Intersection 25: Valencia Avenue at Driveway B

Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | S, N |
| Minor Approaches    | E, W |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

Warrant Analysis Traffic Volumes

| Hour | Major Streets |     | Minor Streets |    |
|------|---------------|-----|---------------|----|
|      | S             | N   | E             | W  |
| 1    | 1555          | 920 | 48            | 60 |
| 2    | 1508          | 892 | 47            | 58 |
| 3    | 1477          | 874 | 46            | 57 |
| 4    | 1384          | 819 | 43            | 53 |
| 5    | 1228          | 727 | 38            | 47 |
| 6    | 1213          | 718 | 37            | 47 |
| 7    | 1197          | 708 | 37            | 46 |
| 8    | 1089          | 644 | 34            | 42 |
| 9    | 1073          | 635 | 33            | 41 |
| 10   | 1057          | 626 | 33            | 41 |
| 11   | 917           | 543 | 28            | 35 |
| 12   | 855           | 506 | 26            | 33 |
| 13   | 840           | 497 | 26            | 32 |
| 14   | 622           | 368 | 19            | 24 |
| 15   | 622           | 368 | 19            | 24 |
| 16   | 435           | 258 | 13            | 17 |
| 17   | 249           | 147 | 8             | 10 |
| 18   | 249           | 147 | 8             | 10 |
| 19   | 140           | 83  | 4             | 5  |
| 20   | 78            | 46  | 2             | 3  |
| 21   | 47            | 28  | 1             | 2  |
| 22   | 16            | 9   | 0             | 1  |
| 23   | 16            | 9   | 0             | 1  |
| 24   | 16            | 9   | 0             | 1  |

**Warrant Analysis by Hour**

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2475   | 2            | 60     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 2         | 3             | 2400   | 2            | 58     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 3         | 3             | 2351   | 2            | 57     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 4         | 3             | 2203   | 2            | 53     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 5         | 3             | 1955   | 2            | 47     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 6         | 3             | 1931   | 2            | 47     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 7         | 3             | 1905   | 2            | 46     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 8         | 3             | 1733   | 2            | 42     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 1708   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 1683   | 2            | 41     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1460   | 2            | 35     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1361   | 2            | 33     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1337   | 2            | 32     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 990    | 2            | 24     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 990    | 2            | 24     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 693    | 2            | 17     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 396    | 2            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 396    | 2            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 223    | 2            | 5      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 124    | 2            | 3      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 75     | 2            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 25     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 25     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 25     | 2            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 0   | 3   | 0         | 0                        |

**Warrant 3 Condition A**

| Orientation  | E         | W    |
|--|-----------|------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 248.3     | 18.6 |
| Number of Lanes on Minor Street Approach                 | 2         | 2    |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 3:18      | 0:18 |
| Delay Condition Met                                      | No        | No   |
| Volume on Minor Street Approach During Same Hour         | 48        | 60   |
| High Minor Volume Condition Met                          | No        | No   |
| Total Entering Volume on All Approaches During Same Hour | 2583      | 2583 |
| Number of Approaches on Intersection                     | 4         | 4    |
| Total Volume Condition Met                               | Yes       | Yes  |
| Warrant Met for Approach                                 | No        | No   |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |      |

## APPENDIX J

### REDBAY AVENUE AT BIRCH STREET FOCUSED ASSESSMENT

*APPENDIX J-1*

**EXISTING TRAFFIC CONDITIONS – SIGNAL WARRANT**

## Signal Warrants Report For Intersection 31: Redbay Avenue at Birch Street

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | E, W |
| Minor Approaches    | S, N |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |    |
|------|---------------|------|---------------|----|
|      | E             | W    | S             | N  |
| 1    | 1180          | 1137 | 65            | 65 |
| 2    | 1145          | 1103 | 63            | 63 |
| 3    | 1121          | 1080 | 62            | 62 |
| 4    | 1050          | 1012 | 58            | 58 |
| 5    | 932           | 898  | 51            | 51 |
| 6    | 920           | 887  | 51            | 51 |
| 7    | 909           | 875  | 50            | 50 |
| 8    | 826           | 796  | 46            | 46 |
| 9    | 814           | 785  | 45            | 45 |
| 10   | 802           | 773  | 44            | 44 |
| 11   | 696           | 671  | 38            | 38 |
| 12   | 649           | 625  | 36            | 36 |
| 13   | 637           | 614  | 35            | 35 |
| 14   | 472           | 455  | 26            | 26 |
| 15   | 472           | 455  | 26            | 26 |
| 16   | 330           | 318  | 18            | 18 |
| 17   | 189           | 182  | 10            | 10 |
| 18   | 189           | 182  | 10            | 10 |
| 19   | 106           | 102  | 6             | 6  |
| 20   | 59            | 57   | 3             | 3  |
| 21   | 35            | 34   | 2             | 2  |
| 22   | 12            | 11   | 1             | 1  |
| 23   | 12            | 11   | 1             | 1  |
| 24   | 12            | 11   | 1             | 1  |

**Warrant Analysis by Hour**

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2317   | 1            | 65     | No                    | No  | No  | No  | No                    | Yes | Yes | Yes | Yes       | No                       |
| 2         | 3             | 2248   | 1            | 63     | No                    | No  | No  | No  | No                    | Yes | Yes | Yes | Yes       | No                       |
| 3         | 3             | 2201   | 1            | 62     | No                    | No  | No  | No  | No                    | Yes | Yes | Yes | Yes       | No                       |
| 4         | 3             | 2062   | 1            | 58     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 5         | 3             | 1830   | 1            | 51     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 6         | 3             | 1807   | 1            | 51     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 7         | 3             | 1784   | 1            | 50     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 8         | 3             | 1622   | 1            | 46     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 9         | 3             | 1599   | 1            | 45     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 10        | 3             | 1575   | 1            | 44     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 11        | 3             | 1367   | 1            | 38     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1274   | 1            | 36     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1251   | 1            | 35     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 927    | 1            | 26     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 927    | 1            | 26     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 648    | 1            | 18     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 371    | 1            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 371    | 1            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 208    | 1            | 6      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 116    | 1            | 3      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 69     | 1            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 23     | 1            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 23     | 1            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 23     | 1            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 3   | 4   | 10  | 3         | 0                        |

**Warrant 3 Condition A**

| Orientation  | S         | N     |
|--|-----------|-------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 119.2     | 546.2 |
| Number of Lanes on Minor Street Approach                 | 1         | 1     |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 2:09      | 9:51  |
| Delay Condition Met                                      | No        | Yes   |
| Volume on Minor Street Approach During Same Hour         | 65        | 65    |
| High Minor Volume Condition Met                          | No        | No    |
| Total Entering Volume on All Approaches During Same Hour | 2447      | 2447  |
| Number of Approaches on Intersection                     | 4         | 4     |
| Total Volume Condition Met                               | Yes       | Yes   |
| Warrant Met for Approach                                 | No        | No    |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |       |



## Signal Warrants Report For Intersection 31: Redbay Avenue at Birch Street

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | E, W |
| Minor Approaches    | S, N |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |    |
|------|---------------|------|---------------|----|
|      | E             | W    | S             | N  |
| 1    | 1595          | 1538 | 49            | 48 |
| 2    | 1547          | 1492 | 48            | 47 |
| 3    | 1515          | 1461 | 47            | 46 |
| 4    | 1420          | 1369 | 44            | 43 |
| 5    | 1260          | 1215 | 39            | 38 |
| 6    | 1244          | 1200 | 38            | 37 |
| 7    | 1228          | 1184 | 38            | 37 |
| 8    | 1117          | 1077 | 34            | 34 |
| 9    | 1101          | 1061 | 34            | 33 |
| 10   | 1085          | 1046 | 33            | 33 |
| 11   | 941           | 907  | 29            | 28 |
| 12   | 877           | 846  | 27            | 26 |
| 13   | 861           | 831  | 26            | 26 |
| 14   | 638           | 615  | 20            | 19 |
| 15   | 638           | 615  | 20            | 19 |
| 16   | 447           | 431  | 14            | 13 |
| 17   | 255           | 246  | 8             | 8  |
| 18   | 255           | 246  | 8             | 8  |
| 19   | 144           | 138  | 4             | 4  |
| 20   | 80            | 77   | 2             | 2  |
| 21   | 48            | 46   | 1             | 1  |
| 22   | 16            | 15   | 0             | 0  |
| 23   | 16            | 15   | 0             | 0  |
| 24   | 16            | 15   | 0             | 0  |

**Warrant Analysis by Hour**

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 3133   | 1            | 49     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 2         | 3             | 3039   | 1            | 48     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 3         | 3             | 2976   | 1            | 47     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 4         | 3             | 2789   | 1            | 44     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 5         | 3             | 2475   | 1            | 39     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 6         | 3             | 2444   | 1            | 38     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 7         | 3             | 2412   | 1            | 38     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 8         | 3             | 2194   | 1            | 34     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 2162   | 1            | 34     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 2131   | 1            | 33     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1848   | 1            | 29     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1723   | 1            | 27     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1692   | 1            | 26     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 1253   | 1            | 20     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 1253   | 1            | 20     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 878    | 1            | 14     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 501    | 1            | 8      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 501    | 1            | 8      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 282    | 1            | 4      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 157    | 1            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 94     | 1            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 31     | 1            | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 31     | 1            | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 31     | 1            | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 0   | 4   | 0         | 0                        |

**Warrant 3 Condition A**

| Orientation  | S         | N     |
|--|-----------|-------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 1035.8    | 644.4 |
| Number of Lanes on Minor Street Approach                 | 1         | 1     |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 14:05     | 8:35  |
| Delay Condition Met                                      | Yes       | Yes   |
| Volume on Minor Street Approach During Same Hour         | 49        | 48    |
| High Minor Volume Condition Met                          | No        | No    |
| Total Entering Volume on All Approaches During Same Hour | 3230      | 3230  |
| Number of Approaches on Intersection                     | 4         | 4     |
| Total Volume Condition Met                               | Yes       | Yes   |
| Warrant Met for Approach                                 | No        | No    |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |       |

*APPENDIX J-II*

**EXISTING PLUS PROJECT TRAFFIC CONDITIONS –  
SIGNAL WARRANT**

Signal Warrants Report For Intersection 31: Redbay Avenue at Birch Street

Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | E, W |
| Minor Approaches    | S, N |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |    |
|------|---------------|------|---------------|----|
|      | E             | W    | S             | N  |
| 1    | 1207          | 1148 | 65            | 65 |
| 2    | 1171          | 1114 | 63            | 63 |
| 3    | 1147          | 1091 | 62            | 62 |
| 4    | 1074          | 1022 | 58            | 58 |
| 5    | 954           | 907  | 51            | 51 |
| 6    | 941           | 895  | 51            | 51 |
| 7    | 929           | 884  | 50            | 50 |
| 8    | 845           | 804  | 46            | 46 |
| 9    | 833           | 792  | 45            | 45 |
| 10   | 821           | 781  | 44            | 44 |
| 11   | 712           | 677  | 38            | 38 |
| 12   | 664           | 631  | 36            | 36 |
| 13   | 652           | 620  | 35            | 35 |
| 14   | 483           | 459  | 26            | 26 |
| 15   | 483           | 459  | 26            | 26 |
| 16   | 338           | 321  | 18            | 18 |
| 17   | 193           | 184  | 10            | 10 |
| 18   | 193           | 184  | 10            | 10 |
| 19   | 109           | 103  | 6             | 6  |
| 20   | 60            | 57   | 3             | 3  |
| 21   | 36            | 34   | 2             | 2  |
| 22   | 12            | 11   | 1             | 1  |
| 23   | 12            | 11   | 1             | 1  |
| 24   | 12            | 11   | 1             | 1  |

## Warrant Analysis by Hour

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 2355   | 1            | 65     | No                    | No  | No  | No  | No                    | Yes | Yes | Yes | Yes       | No                       |
| 2         | 3             | 2285   | 1            | 63     | No                    | No  | No  | No  | No                    | Yes | Yes | Yes | Yes       | No                       |
| 3         | 3             | 2238   | 1            | 62     | No                    | No  | No  | No  | No                    | Yes | Yes | Yes | Yes       | No                       |
| 4         | 3             | 2096   | 1            | 58     | No                    | No  | No  | No  | No                    | No  | Yes | Yes | No        | No                       |
| 5         | 3             | 1861   | 1            | 51     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 6         | 3             | 1836   | 1            | 51     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 7         | 3             | 1813   | 1            | 50     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 8         | 3             | 1649   | 1            | 46     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 9         | 3             | 1625   | 1            | 45     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 10        | 3             | 1602   | 1            | 44     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 11        | 3             | 1389   | 1            | 38     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1295   | 1            | 36     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1272   | 1            | 35     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 942    | 1            | 26     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 942    | 1            | 26     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 659    | 1            | 18     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 377    | 1            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 377    | 1            | 10     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 212    | 1            | 6      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 117    | 1            | 3      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 70     | 1            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 23     | 1            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 23     | 1            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 23     | 1            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 3   | 4   | 10  | 3         | 0                        |

## Warrant 3 Condition A

| Orientation  | S         | N     |
|--|-----------|-------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 132.5     | 609.7 |
| Number of Lanes on Minor Street Approach                 | 1         | 1     |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 2:23      | 11:00 |
| Delay Condition Met                                      | No        | Yes   |
| Volume on Minor Street Approach During Same Hour         | 65        | 65    |
| High Minor Volume Condition Met                          | No        | No    |
| Total Entering Volume on All Approaches During Same Hour | 2485      | 2485  |
| Number of Approaches on Intersection                     | 4         | 4     |
| Total Volume Condition Met                               | Yes       | Yes   |
| Warrant Met for Approach                                 | No        | No    |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |       |

## Signal Warrants Report For Intersection 31: Redbay Avenue at Birch Street

## Warrants Summary

| Warrant | Name                        | Met? |
|---------|-----------------------------|------|
| #1      | Eight Hour Vehicular Volume | No   |
| #2      | Four Hour Vehicular Volume  | No   |
| #3      | Peak Hour                   | No   |

## Intersection Warrants Parameters

|                     |      |
|---------------------|------|
| Major Approaches    | E, W |
| Minor Approaches    | S, N |
| Speed > 40mph       | Yes  |
| Population < 10,000 | No   |
| Warrant Factor      | 70%  |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets |      | Minor Streets |    |
|------|---------------|------|---------------|----|
|      | E             | W    | S             | N  |
| 1    | 1613          | 1568 | 49            | 48 |
| 2    | 1565          | 1521 | 48            | 47 |
| 3    | 1532          | 1490 | 47            | 46 |
| 4    | 1436          | 1396 | 44            | 43 |
| 5    | 1274          | 1239 | 39            | 38 |
| 6    | 1258          | 1223 | 38            | 37 |
| 7    | 1242          | 1207 | 38            | 37 |
| 8    | 1129          | 1098 | 34            | 34 |
| 9    | 1113          | 1082 | 34            | 33 |
| 10   | 1097          | 1066 | 33            | 33 |
| 11   | 952           | 925  | 29            | 28 |
| 12   | 887           | 862  | 27            | 26 |
| 13   | 871           | 847  | 26            | 26 |
| 14   | 645           | 627  | 20            | 19 |
| 15   | 645           | 627  | 20            | 19 |
| 16   | 452           | 439  | 14            | 13 |
| 17   | 258           | 251  | 8             | 8  |
| 18   | 258           | 251  | 8             | 8  |
| 19   | 145           | 141  | 4             | 4  |
| 20   | 81            | 78   | 2             | 2  |
| 21   | 48            | 47   | 1             | 1  |
| 22   | 16            | 16   | 0             | 0  |
| 23   | 16            | 16   | 0             | 0  |
| 24   | 16            | 16   | 0             | 0  |

**Warrant Analysis by Hour**

| Hour      | Major Streets |        | Minor Street |        | Warrant 1 Condition A |     |     |     | Warrant 1 Condition B |     |     |     | Warrant 2 | Warrant 3<br>Condition B |
|-----------|---------------|--------|--------------|--------|-----------------------|-----|-----|-----|-----------------------|-----|-----|-----|-----------|--------------------------|
|           | Number        | Volume | Number       | Volume | 100%                  | 80% | 70% | 56% | 100%                  | 80% | 70% | 56% |           |                          |
| 1         | 3             | 3181   | 1            | 49     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 2         | 3             | 3086   | 1            | 48     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 3         | 3             | 3022   | 1            | 47     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 4         | 3             | 2832   | 1            | 44     | No                    | No  | No  | No  | No                    | No  | No  | Yes | No        | No                       |
| 5         | 3             | 2513   | 1            | 39     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 6         | 3             | 2481   | 1            | 38     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 7         | 3             | 2449   | 1            | 38     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 8         | 3             | 2227   | 1            | 34     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 9         | 3             | 2195   | 1            | 34     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 10        | 3             | 2163   | 1            | 33     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 11        | 3             | 1877   | 1            | 29     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 12        | 3             | 1749   | 1            | 27     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 13        | 3             | 1718   | 1            | 26     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 14        | 3             | 1272   | 1            | 20     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 15        | 3             | 1272   | 1            | 20     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 16        | 3             | 891    | 1            | 14     | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 17        | 3             | 509    | 1            | 8      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 18        | 3             | 509    | 1            | 8      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 19        | 3             | 286    | 1            | 4      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 20        | 3             | 159    | 1            | 2      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 21        | 3             | 95     | 1            | 1      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 22        | 3             | 32     | 1            | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 23        | 3             | 32     | 1            | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| 24        | 3             | 32     | 1            | 0      | No                    | No  | No  | No  | No                    | No  | No  | No  | No        | No                       |
| Hours Met |               |        |              |        | 0                     | 0   | 0   | 0   | 0                     | 0   | 0   | 4   | 0         | 0                        |

**Warrant 3 Condition A**

| Orientation  | S         | N     |
|--|-----------|-------|
| Total Stopped Delay Per Vehicle on Minor Approach (s)    | 1145.2    | 709.1 |
| Number of Lanes on Minor Street Approach                 | 1         | 1     |
| VehicleHours of Stopped Delay on Minor Approach (h:mm)   | 15:35     | 9:27  |
| Delay Condition Met                                      | Yes       | Yes   |
| Volume on Minor Street Approach During Same Hour         | 49        | 48    |
| High Minor Volume Condition Met                          | No        | No    |
| Total Entering Volume on All Approaches During Same Hour | 3278      | 3278  |
| Number of Approaches on Intersection                     | 4         | 4     |
| Total Volume Condition Met                               | Yes       | Yes   |
| Warrant Met for Approach                                 | No        | No    |
| <b>Warrant Met for Intersection</b>                      | <b>No</b> |       |

*APPENDIX J-III*

**EXISTING TRAFFIC CONDITIONS – HCM**



**Intersection Level Of Service Report**  
**Intersection 31: Redbay Avenue at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 614.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.633 |

**Intersection Setup**

| Name                         | Redbay Ave |        |        | Redbay Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           | +          |        |        | +          |        |        | T T T     |        |        | T T T     |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 0      | 0          | 0      | 0      | 1         | 0      | 0      | 1         | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 25.00      |        |        | 25.00      |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00      |        |        | 0.00      |        |        |
| Crosswalk                    | No         |        |        | No         |        |        | No        |        |        | No        |        |        |

**Volumes**

| Name                                    | Redbay Ave |        |        | Redbay Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|------------|--------|--------|------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]               | 13         | 0      | 52     | 33         | 0      | 32     | 10       | 1108   | 19     | 32       | 1118   | 30     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]             | 13         | 0      | 52     | 33         | 0      | 32     | 10       | 1108   | 19     | 32       | 1118   | 30     |
| Peak Hour Factor                        | 0.6560     | 0.6560 | 0.6560 | 0.8290     | 0.8290 | 0.8290 | 0.8990   | 0.8990 | 0.8990 | 0.8470   | 0.8470 | 0.8470 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 5          | 0      | 20     | 10         | 0      | 10     | 3        | 308    | 5      | 9        | 330    | 9      |
| Total Analysis Volume [veh/h]           | 20         | 0      | 79     | 40         | 0      | 39     | 11       | 1232   | 21     | 38       | 1320   | 35     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Stop | Stop | Free | Free |
| Flared Lane                        | No   | No   |      |      |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           | No   | No   |      |      |
| Number of Storage Spaces in Median | 0    | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |        |        |        |        |        |        |       |      |      |       |      |      |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|------|------|-------|------|------|
| V/C, Movement V/C Ratio               | 0.67   | 0.00   | 0.19   | 1.63   | 0.00   | 0.10   | 0.02  | 0.01 | 0.00 | 0.07  | 0.01 | 0.00 |
| d_M, Delay for Movement [s/veh]       | 209.44 | 274.61 | 96.39  | 614.27 | 652.00 | 476.41 | 12.31 | 0.00 | 0.00 | 12.02 | 0.00 | 0.00 |
| Movement LOS                          | F      | F      | F      | F      | F      | F      | B     | A    | A    | B     | A    | A    |
| 95th-Percentile Queue Length [veh/ln] | 5.17   | 5.17   | 5.17   | 7.92   | 7.92   | 7.92   | 0.07  | 0.00 | 0.00 | 0.22  | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln]  | 129.23 | 129.23 | 129.23 | 197.88 | 197.88 | 197.88 | 1.67  | 0.00 | 0.00 | 5.54  | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh]           | 119.23 |        |        | 546.21 |        |        | 0.11  |      |      | 0.33  |      |      |
| Approach LOS                          | F      |        |        | F      |        |        | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh]       | 19.59  |        |        |        |        |        |       |      |      |       |      |      |
| Intersection LOS                      | F      |        |        |        |        |        |       |      |      |       |      |      |

**Intersection Level Of Service Report**  
**Intersection 31: Redbay Avenue at Birch Street**

|                  |                 |                           |         |
|------------------|-----------------|---------------------------|---------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 1,203.6 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F       |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 2.469   |

**Intersection Setup**

| Name                         | Redbay Ave |        |        | Redbay Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           | +          |        |        | +          |        |        | TTL       |        |        | TTL       |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 0      | 0          | 0      | 0      | 1         | 0      | 0      | 1         | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 25.00      |        |        | 25.00      |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00      |        |        | 0.00      |        |        |
| Crosswalk                    | No         |        |        | No         |        |        | No        |        |        | No        |        |        |

**Volumes**

| Name                                    | Redbay Ave |        |        | Redbay Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|------------|--------|--------|------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]               | 21         | 0      | 28     | 15         | 0      | 33     | 47       | 1452   | 39     | 14       | 1542   | 39     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]             | 21         | 0      | 28     | 15         | 0      | 33     | 47       | 1452   | 39     | 14       | 1542   | 39     |
| Peak Hour Factor                        | 0.7340     | 0.7340 | 0.7340 | 0.8390     | 0.8390 | 0.8390 | 0.9590   | 0.9590 | 0.9590 | 0.9510   | 0.9510 | 0.9510 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 7          | 0      | 10     | 4          | 0      | 10     | 12       | 379    | 10     | 4        | 405    | 10     |
| Total Analysis Volume [veh/h]           | 29         | 0      | 38     | 18         | 0      | 39     | 49       | 1514   | 41     | 15       | 1621   | 41     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Stop | Stop | Free | Free |
| Flared Lane                        | No   | No   |      |      |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           | No   | No   |      |      |
| Number of Storage Spaces in Median | 0    | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |         |         |        |        |         |        |       |      |      |       |      |      |
|---------------------------------------|---------|---------|--------|--------|---------|--------|-------|------|------|-------|------|------|
| V/C, Movement V/C Ratio               | 2.47    | 0.00    | 0.11   | 1.66   | 0.00    | 0.12   | 0.13  | 0.02 | 0.00 | 0.04  | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh]       | 1203.64 | 1424.45 | 907.72 | 863.96 | 1058.84 | 543.01 | 15.76 | 0.00 | 0.00 | 13.85 | 0.00 | 0.00 |
| Movement LOS                          | F       | F       | F      | F      | F       | F      | C     | A    | A    | B     | A    | A    |
| 95th-Percentile Queue Length [veh/ln] | 8.20    | 8.20    | 8.20   | 6.45   | 6.45    | 6.45   | 0.44  | 0.00 | 0.00 | 0.11  | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln]  | 204.90  | 204.90  | 204.90 | 161.28 | 161.28  | 161.28 | 10.88 | 0.00 | 0.00 | 2.76  | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh]           | 1035.81 |         |        | 644.37 |         |        | 0.48  |      |      | 0.12  |      |      |
| Approach LOS                          | F       |         |        | F      |         |        | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh]       | 31.46   |         |        |        |         |        |       |      |      |       |      |      |
| Intersection LOS                      | F       |         |        |        |         |        |       |      |      |       |      |      |

*APPENDIX J-IV*

**EXISTING PLUS PROJECT TRAFFIC CONDITIONS –  
HCM**

**Intersection Level Of Service Report**  
**Intersection 31: Redbay Avenue at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 683.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 1.753 |

**Intersection Setup**

| Name                         | Redbay Ave |        |        | Redbay Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           | +          |        |        | +          |        |        | T T T     |        |        | T T T     |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 0      | 0          | 0      | 0      | 1         | 0      | 0      | 1         | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 25.00      |        |        | 25.00      |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00      |        |        | 0.00      |        |        |
| Crosswalk                    | No         |        |        | No         |        |        | No        |        |        | No        |        |        |

**Volumes**

| Name                                    | Redbay Ave |        |        | Redbay Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|------------|--------|--------|------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]               | 13         | 0      | 52     | 33         | 0      | 32     | 10       | 1119   | 19     | 32       | 1145   | 30     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]             | 13         | 0      | 52     | 33         | 0      | 32     | 10       | 1119   | 19     | 32       | 1145   | 30     |
| Peak Hour Factor                        | 0.6560     | 0.6560 | 0.6560 | 0.8290     | 0.8290 | 0.8290 | 0.8990   | 0.8990 | 0.8990 | 0.8470   | 0.8470 | 0.8470 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 5          | 0      | 20     | 10         | 0      | 10     | 3        | 311    | 5      | 9        | 338    | 9      |
| Total Analysis Volume [veh/h]           | 20         | 0      | 79     | 40         | 0      | 39     | 11       | 1245   | 21     | 38       | 1352   | 35     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Stop | Stop | Free | Free |
| Flared Lane                        | No   | No   |      |      |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           | No   | No   |      |      |
| Number of Storage Spaces in Median | 0    | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |        |        |        |        |        |        |       |      |      |       |      |      |
|---------------------------------------|--------|--------|--------|--------|--------|--------|-------|------|------|-------|------|------|
| V/C, Movement V/C Ratio               | 0.71   | 0.00   | 0.19   | 1.75   | 0.00   | 0.10   | 0.02  | 0.01 | 0.00 | 0.07  | 0.01 | 0.00 |
| d_M, Delay for Movement [s/veh]       | 228.10 | 299.81 | 108.30 | 682.96 | 723.08 | 534.49 | 12.52 | 0.00 | 0.00 | 12.10 | 0.00 | 0.00 |
| Movement LOS                          | F      | F      | F      | F      | F      | F      | B     | A    | A    | B     | A    | A    |
| 95th-Percentile Queue Length [veh/ln] | 5.44   | 5.44   | 5.44   | 8.17   | 8.17   | 8.17   | 0.07  | 0.00 | 0.00 | 0.22  | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln]  | 136.09 | 136.09 | 136.09 | 204.36 | 204.36 | 204.36 | 1.72  | 0.00 | 0.00 | 5.60  | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh]           | 132.50 |        |        | 609.66 |        |        | 0.11  |      |      | 0.32  |      |      |
| Approach LOS                          | F      |        |        | F      |        |        | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh]       | 21.49  |        |        |        |        |        |       |      |      |       |      |      |
| Intersection LOS                      | F      |        |        |        |        |        |       |      |      |       |      |      |

**Intersection Level Of Service Report**  
**Intersection 31: Redbay Avenue at Birch Street**

|                  |                 |                           |         |
|------------------|-----------------|---------------------------|---------|
| Control Type:    | Two-way stop    | Delay (sec / veh):        | 1,326.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | F       |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 2.667   |

**Intersection Setup**

| Name                         | Redbay Ave |        |        | Redbay Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|------------|--------|--------|------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound |        |        | Southbound |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           | +          |        |        | +          |        |        | T T T     |        |        | T T T     |        |        |
| Turning Movement             | Left       | Thru   | Right  | Left       | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00      | 12.00  | 12.00  | 12.00      | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 0          | 0      | 0      | 0          | 0      | 0      | 1         | 0      | 0      | 1         | 0      | 0      |
| Entry Pocket Length [ft]     | 100.00     | 100.00 | 100.00 | 100.00     | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0          | 0      | 0      | 0          | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00       | 0.00   | 0.00   | 0.00       | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 25.00      |        |        | 25.00      |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00       |        |        | 0.00       |        |        | 0.00      |        |        | 0.00      |        |        |
| Crosswalk                    | No         |        |        | No         |        |        | No        |        |        | No        |        |        |

**Volumes**

| Name                                    | Redbay Ave |        |        | Redbay Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|------------|--------|--------|------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]               | 21         | 0      | 28     | 15         | 0      | 33     | 47       | 1482   | 39     | 14       | 1560   | 39     |
| Base Volume Adjustment Factor           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00       | 2.00   | 2.00   | 2.00       | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                           | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                  | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                    | 0          | 0      | 0      | 0          | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]             | 21         | 0      | 28     | 15         | 0      | 33     | 47       | 1482   | 39     | 14       | 1560   | 39     |
| Peak Hour Factor                        | 0.7340     | 0.7340 | 0.7340 | 0.8390     | 0.8390 | 0.8390 | 0.9590   | 0.9590 | 0.9590 | 0.9510   | 0.9510 | 0.9510 |
| Other Adjustment Factor                 | 1.0000     | 1.0000 | 1.0000 | 1.0000     | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 7          | 0      | 10     | 4          | 0      | 10     | 12       | 386    | 10     | 4        | 410    | 10     |
| Total Analysis Volume [veh/h]           | 29         | 0      | 38     | 18         | 0      | 39     | 49       | 1545   | 41     | 15       | 1640   | 41     |
| Pedestrian Volume [ped/h]               | 0          |        |        | 0          |        |        | 0        |        |        | 0        |        |        |



**Intersection Settings**

|                                    |      |      |      |      |
|------------------------------------|------|------|------|------|
| Priority Scheme                    | Stop | Stop | Free | Free |
| Flared Lane                        | No   | No   |      |      |
| Storage Area [veh]                 | 0    | 0    | 0    | 0    |
| Two-Stage Gap Acceptance           | No   | No   |      |      |
| Number of Storage Spaces in Median | 0    | 0    | 0    | 0    |

**Movement, Approach, & Intersection Results**

|                                       |         |         |         |        |         |        |       |      |      |       |      |      |
|---------------------------------------|---------|---------|---------|--------|---------|--------|-------|------|------|-------|------|------|
| V/C, Movement V/C Ratio               | 2.67    | 0.00    | 0.11    | 1.78   | 0.00    | 0.13   | 0.13  | 0.02 | 0.00 | 0.04  | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh]       | 1326.81 | 1567.46 | 1006.57 | 944.43 | 1160.53 | 600.46 | 15.97 | 0.00 | 0.00 | 14.11 | 0.00 | 0.00 |
| Movement LOS                          | F       | F       | F       | F      | F       | F      | C     | A    | A    | B     | A    | A    |
| 95th-Percentile Queue Length [veh/ln] | 8.37    | 8.37    | 8.37    | 6.62   | 6.62    | 6.62   | 0.44  | 0.00 | 0.00 | 0.11  | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln]  | 209.18  | 209.18  | 209.18  | 165.39 | 165.39  | 165.39 | 11.09 | 0.00 | 0.00 | 2.84  | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh]           | 1145.18 |         |         | 709.08 |         |        | 0.48  |      |      | 0.12  |      |      |
| Approach LOS                          | F       |         |         | F      |         |        | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh]       | 34.19   |         |         |        |         |        |       |      |      |       |      |      |
| Intersection LOS                      | F       |         |         |        |         |        |       |      |      |       |      |      |

## APPENDIX K

### VOYAGER AVENUE AT BIRCH STREET AND N. ASSOCIATED ROAD AT BIRCH STREET FOCUSED ASSESSMENT

*APPENDIX K-1*

**EXISTING TRAFFIC CONDITIONS – ICU**

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.529 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1                 | 1      | 1      | 38                | 1      | 109    | 77           | 203    | 4      | 2            | 174    | 20     |
| Total Analysis Volume [veh/h]           | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.09 | 0.00 | 0.08 | 0.18 | 0.24 | 0.24 | 0.00 | 0.20 | 0.05 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.529 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 32: Voyager Avenue at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.330 |

**Intersection Setup**

| Name                         | Voyager Ave |        |        | Voyager Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|-------------|--------|--------|-------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           | ↵↵          |        |        | ↵↵          |        |        | ↵↵↵       |        |        | ↵↵↵       |        |        |
| Turning Movement             | Left        | Thru   | Right  | Left        | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1           | 0      | 0      | 0           | 0      | 1      | 1         | 0      | 0      | 1         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0           | 0      | 0      | 0           | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00        | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00       |        |        | 30.00       |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00        |        |        | 0.00        |        |        | 0.00      |        |        | 0.00      |        |        |
| Crosswalk                    | Yes         |        |        | Yes         |        |        | Yes       |        |        | Yes       |        |        |

**Volumes**

| Name                                    | Voyager Ave |        |        | Voyager Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|-------------|--------|--------|-------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]               | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 575    | 74     | 31       | 459    | 127    |
| Base Volume Adjustment Factor           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                  | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                    | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]             | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 575    | 74     | 31       | 459    | 127    |
| Peak Hour Factor                        | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 7           | 6      | 4      | 19          | 1      | 23     | 24       | 144    | 19     | 8        | 115    | 32     |
| Total Analysis Volume [veh/h]           | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 575    | 74     | 31       | 459    | 127    |
| Pedestrian Volume [ped/h]               | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| Bicycle Volume [bicycles/h]             | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.02 | 0.02 | 0.04 | 0.05 | 0.05 | 0.06 | 0.19 | 0.19 | 0.02 | 0.14 | 0.07 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.330 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.626 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↔↔↔               |        |        | ↔↔↔               |        |        | ↔↔↔          |        |        | ↔↔↔          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3                 | 1      | 3      | 24                | 1      | 69     | 66           | 216    | 3      | 1            | 303    | 32     |
| Total Analysis Volume [veh/h]           | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |



**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.06 | 0.00 | 0.01 | 0.16 | 0.26 | 0.26 | 0.00 | 0.36 | 0.07 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.626 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 32: Voyager Avenue at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.334 |

**Intersection Setup**

| Name                         | Voyager Ave |        |        | Voyager Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|-------------|--------|--------|-------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           | ↵↵          |        |        | ↵↵          |        |        | ↵↵↵       |        |        | ↵↵↵       |        |        |
| Turning Movement             | Left        | Thru   | Right  | Left        | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1           | 0      | 0      | 0           | 0      | 1      | 1         | 0      | 0      | 1         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0           | 0      | 0      | 0           | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00        | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00       |        |        | 30.00       |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00        |        |        | 0.00        |        |        | 0.00      |        |        | 0.00      |        |        |
| Crosswalk                    | Yes         |        |        | Yes         |        |        | Yes       |        |        | Yes       |        |        |

**Volumes**

| Name                                    | Voyager Ave |        |        | Voyager Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|-------------|--------|--------|-------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]               | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 848    | 10     | 2        | 641    | 11     |
| Base Volume Adjustment Factor           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                  | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                    | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]             | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 848    | 10     | 2        | 641    | 11     |
| Peak Hour Factor                        | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 12          | 0      | 10     | 3           | 0      | 5      | 7        | 212    | 3      | 1        | 160    | 3      |
| Total Analysis Volume [veh/h]           | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 848    | 10     | 2        | 641    | 11     |
| Pedestrian Volume [ped/h]               | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| Bicycle Volume [bicycles/h]             | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.02 | 0.02 | 0.01 | 0.00 | 0.01 | 0.02 | 0.25 | 0.25 | 0.00 | 0.19 | 0.01 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.334 |      |      |      |      |      |      |      |      |      |      |      |

*APPENDIX K-II*

**EXISTING PLUS PROJECT TRAFFIC CONDITIONS –  
ICU**

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.542 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 827    | 16     | 8            | 740    | 78     |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 827    | 16     | 8            | 740    | 78     |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 1                 | 1      | 1      | 38                | 1      | 109    | 77           | 207    | 4      | 2            | 185    | 20     |
| Total Analysis Volume [veh/h]           | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 827    | 16     | 8            | 740    | 78     |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.00  | 0.00 | 0.00 | 0.09 | 0.00 | 0.08 | 0.18 | 0.25 | 0.25 | 0.00 | 0.22 | 0.05 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.542 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 32: Voyager Avenue at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.336 |

**Intersection Setup**

| Name                         | Voyager Ave |        |        | Voyager Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|-------------|--------|--------|-------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           | ↵↻          |        |        | ↻↵          |        |        | ↵↻        |        |        | ↻↵        |        |        |
| Turning Movement             | Left        | Thru   | Right  | Left        | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1           | 0      | 0      | 0           | 0      | 1      | 1         | 0      | 0      | 1         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0           | 0      | 0      | 0           | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00        | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00       |        |        | 30.00       |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00        |        |        | 0.00        |        |        | 0.00      |        |        | 0.00      |        |        |
| Crosswalk                    | Yes         |        |        | Yes         |        |        | Yes       |        |        | Yes       |        |        |

**Volumes**

| Name                                    | Voyager Ave |        |        | Voyager Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|-------------|--------|--------|-------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]               | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 595    | 74     | 31       | 508    | 127    |
| Base Volume Adjustment Factor           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                  | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                    | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]             | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 595    | 74     | 31       | 508    | 127    |
| Peak Hour Factor                        | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 7           | 6      | 4      | 19          | 1      | 23     | 24       | 149    | 19     | 8        | 127    | 32     |
| Total Analysis Volume [veh/h]           | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 595    | 74     | 31       | 508    | 127    |
| Pedestrian Volume [ped/h]               | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| Bicycle Volume [bicycles/h]             | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.02  | 0.02 | 0.02 | 0.04 | 0.05 | 0.05 | 0.06 | 0.20 | 0.20 | 0.02 | 0.15 | 0.07 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.336 |      |      |      |      |      |      |      |      |      |      |      |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | B     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.635 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name                                    | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Base Volume Input [veh/h]               | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 911    | 11     | 5            | 1243   | 127    |
| Base Volume Adjustment Factor           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                           | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                    | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]             | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 911    | 11     | 5            | 1243   | 127    |
| Peak Hour Factor                        | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 3                 | 1      | 3      | 24                | 1      | 69     | 66           | 228    | 3      | 1            | 311    | 32     |
| Total Analysis Volume [veh/h]           | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 911    | 11     | 5            | 1243   | 127    |
| Pedestrian Volume [ped/h]               | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]             | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag              | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.01  | 0.00 | 0.01 | 0.06 | 0.00 | 0.01 | 0.16 | 0.27 | 0.27 | 0.00 | 0.37 | 0.07 |
| Intersection LOS        | B     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.635 |      |      |      |      |      |      |      |      |      |      |      |

**Intersection Level Of Service Report**  
**Intersection 32: Voyager Avenue at Birch Street**

|                  |            |                           |       |
|------------------|------------|---------------------------|-------|
| Control Type:    | Signalized | Delay (sec / veh):        | -     |
| Analysis Method: | ICU 1      | Level Of Service:         | A     |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.351 |

**Intersection Setup**

| Name                         | Voyager Ave |        |        | Voyager Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|-------------|--------|--------|-------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           | ↵↵          |        |        | ↵↵          |        |        | ↵↵↵       |        |        | ↵↵↵       |        |        |
| Turning Movement             | Left        | Thru   | Right  | Left        | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1           | 0      | 0      | 0           | 0      | 1      | 1         | 0      | 0      | 1         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0           | 0      | 0      | 0           | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00        | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00       |        |        | 30.00       |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00        |        |        | 0.00        |        |        | 0.00      |        |        | 0.00      |        |        |
| Crosswalk                    | Yes         |        |        | Yes         |        |        | Yes       |        |        | Yes       |        |        |

**Volumes**

| Name                                    | Voyager Ave |        |        | Voyager Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|-------------|--------|--------|-------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]               | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 908    | 10     | 2        | 680    | 11     |
| Base Volume Adjustment Factor           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]           | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                           | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]               | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                  | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h] | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                    | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]             | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 908    | 10     | 2        | 680    | 11     |
| Peak Hour Factor                        | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Other Adjustment Factor                 | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]          | 12          | 0      | 10     | 3           | 0      | 5      | 7        | 227    | 3      | 1        | 170    | 3      |
| Total Analysis Volume [veh/h]           | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 908    | 10     | 2        | 680    | 11     |
| Pedestrian Volume [ped/h]               | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| Bicycle Volume [bicycles/h]             | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                  |      |
|------------------|------|
| Cycle Length [s] | 100  |
| Lost time [s]    | 5.00 |

**Phasing & Timing**

| Control Type            | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|-------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group            | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag              | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |

**Movement, Approach, & Intersection Results**

|                         |       |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| V/C, Movement V/C Ratio | 0.03  | 0.02 | 0.02 | 0.01 | 0.00 | 0.01 | 0.02 | 0.27 | 0.27 | 0.00 | 0.20 | 0.01 |
| Intersection LOS        | A     |      |      |      |      |      |      |      |      |      |      |      |
| Intersection V/C        | 0.351 |      |      |      |      |      |      |      |      |      |      |      |





*APPENDIX K-III*

**EXISTING TRAFFIC CONDITIONS – HCM**

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.4  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.707 |

**Intersection Setup**

| Name                         | N Associated Road   |        |        | N Associated Road   |        |        | Birch Street  |        |        | Birch Street  |        |        |
|------------------------------|---|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |  |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1      | 1   | 0      | 1      | 1   | 0      | 0      | 1   | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 | No  |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes   |        |        | Yes   |        |        | Yes   |        |        | No  |        |        |

**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 810    | 16     | 8            | 696    | 78     |
| Peak Hour Factor                            | 0.5500            | 0.5500 | 0.5500 | 0.8490            | 0.8490 | 0.8490 | 0.8890       | 0.8890 | 0.8890 | 0.8800       | 0.8800 | 0.8800 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 1                 | 1      | 2      | 45                | 1      | 129    | 87           | 228    | 4      | 2            | 198    | 22     |
| Total Analysis Volume [veh/h]               | 5                 | 5      | 9      | 179               | 2      | 515    | 348          | 911    | 18     | 9            | 791    | 89     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 44       | 37      | 0       | 39       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |



**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 3     | 3     | 3     | 25    | 25    | 62    | 27    | 75    | 75    | 2     | 50    | 50    |
| g / C, Green / Cycle                    | 0.02  | 0.02  | 0.02  | 0.21  | 0.21  | 0.52  | 0.22  | 0.62  | 0.62  | 0.01  | 0.41  | 0.41  |
| (v / s)_i Volume / Saturation Flow Rate | 0.00  | 0.00  | 0.00  | 0.05  | 0.05  | 0.27  | 0.19  | 0.25  | 0.24  | 0.01  | 0.21  | 0.05  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 79    | 46    | 46    | 370   | 370   | 986   | 401   | 1184  | 1184  | 25    | 1574  | 787   |
| d1, Uniform Delay [s]                   | 57.30 | 57.29 | 57.41 | 39.90 | 39.90 | 19.04 | 44.97 | 11.31 | 11.28 | 58.67 | 26.01 | 21.61 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.15  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.33  | 1.01  | 2.01  | 0.34  | 0.34  | 1.98  | 7.82  | 0.98  | 0.97  | 8.46  | 1.15  | 0.29  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |        |        |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.06  | 0.11  | 0.19  | 0.24   | 0.24   | 0.52   | 0.87   | 0.39   | 0.39   | 0.36  | 0.50   | 0.11  |
| d, Delay for Lane Group [s/veh]       | 57.63 | 58.30 | 59.42 | 40.24  | 40.24  | 21.02  | 52.80  | 12.29  | 12.26  | 67.12 | 27.16  | 21.90 |
| Lane Group LOS                        | E     | E     | E     | D      | D      | C      | D      | B      | B      | E     | C      | C     |
| Critical Lane Group                   | No    | No    | Yes   | No     | No     | Yes    | Yes    | No     | No     | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.16  | 0.16  | 0.29  | 2.28   | 2.28   | 9.84   | 10.81  | 6.29   | 6.24   | 0.33  | 8.56   | 1.62  |
| 50th-Percentile Queue Length [ft/ln]  | 3.90  | 4.04  | 7.35  | 57.06  | 57.11  | 245.92 | 270.27 | 157.32 | 156.03 | 8.26  | 214.05 | 40.43 |
| 95th-Percentile Queue Length [veh/ln] | 0.28  | 0.29  | 0.53  | 4.11   | 4.11   | 14.98  | 16.20  | 10.41  | 10.34  | 0.59  | 13.36  | 2.91  |
| 95th-Percentile Queue Length [ft/ln]  | 7.02  | 7.28  | 13.23 | 102.70 | 102.79 | 374.51 | 405.07 | 260.17 | 258.45 | 14.86 | 334.01 | 72.78 |

**Movement, Approach, & Intersection Results**

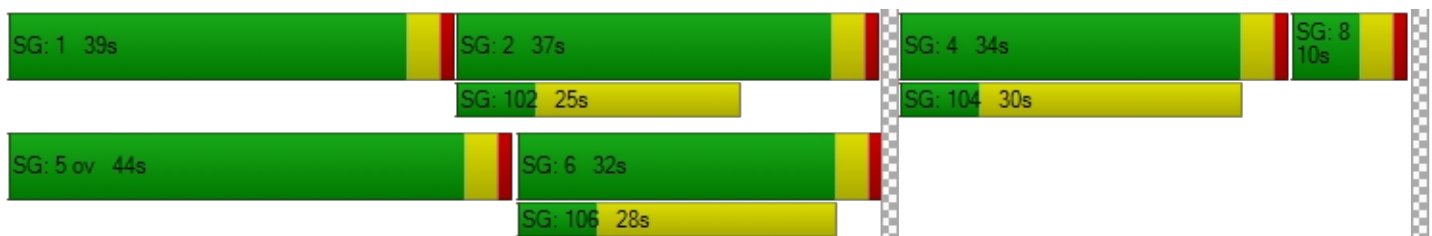
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 57.63 | 58.30 | 59.42 | 40.24 | 40.24 | 21.02 | 52.80 | 12.28 | 12.26 | 67.12 | 27.16 | 21.90 |
| Movement LOS                    | E     | E     | E     | D     | D     | C     | D     | B     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 58.66 |       |       | 26.02 |       |       | 23.32 |       |       | 27.04 |       |       |
| Approach LOS                    | E     |       |       | C     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 25.35 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.707 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 49.52 | 49.52 | 49.52 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.157 | 2.422 | 2.825 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 100   | 500   | 550   | 467   |
| d_b, Bicycle Delay [s]                                   | 54.17 | 33.76 | 31.55 | 35.28 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.591 | 2.708 | 2.613 | 2.293 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 32: Voyager Avenue at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.431 |

**Intersection Setup**

| Name                         | Voyager Ave |        |        | Voyager Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|-------------|--------|--------|-------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           |             |        |        |             |        |        |           |        |        |           |        |        |
| Turning Movement             | Left        | Thru   | Right  | Left        | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1           | 0      | 0      | 0           | 0      | 1      | 1         | 0      | 0      | 1         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0           | 0      | 0      | 0           | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00        | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00       |        |        | 30.00       |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00        |        |        | 0.00        |        |        | 0.00      |        |        | 0.00      |        |        |
| Curb Present                 | No          |        |        | No          |        |        | No        |        |        | No        |        |        |
| Crosswalk                    | Yes         |        |        | Yes         |        |        | Yes       |        |        | Yes       |        |        |

**Volumes**

| Name  | Voyager Ave |        |        | Voyager Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|-------------|--------|--------|-------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]                   | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 595    | 74     | 31       | 508    | 127    |
| Base Volume Adjustment Factor               | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                               | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                      | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                        | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 595    | 74     | 31       | 508    | 127    |
| Peak Hour Factor                            | 0.5710      | 0.5710 | 0.5710 | 0.4170      | 0.4170 | 0.4170 | 0.7600   | 0.7600 | 0.7600 | 0.7430   | 0.7430 | 0.7430 |
| Other Adjustment Factor                     | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 12          | 10     | 7      | 45          | 1      | 56     | 31       | 196    | 24     | 10       | 171    | 43     |
| Total Analysis Volume [veh/h]               | 47          | 40     | 28     | 180         | 5      | 223    | 125      | 783    | 97     | 42       | 684    | 171    |
| Presence of On-Street Parking               | No          |        | No     | No          |        | No     | No       |        | No     | No       |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| Bicycle Volume [bicycles/h]                 | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 51      | 0       | 0       | 51      | 0       | 13       | 34      | 0       | 10       | 31      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 28      | 0       | 0       | 25      | 0       | 0        | 18      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95   | 95   | 95    | 95   | 95   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 14    | 14    | 14    | 14    | 8     | 65   | 65   | 4     | 61   | 61   |
| g / C, Green / Cycle                    | 0.14  | 0.14  | 0.14  | 0.14  | 0.09  | 0.69 | 0.69 | 0.04  | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03  | 0.04  | 0.10  | 0.12  | 0.07  | 0.24 | 0.23 | 0.02  | 0.18 | 0.09 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 126   | 274   | 335   | 274   | 156   | 1303 | 1303 | 78    | 2442 | 1221 |
| d1, Uniform Delay [s]                   | 35.72 | 36.08 | 38.77 | 39.41 | 42.59 | 6.13 | 6.06 | 44.52 | 7.40 | 6.67 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.83  | 0.47  | 1.43  | 5.77  | 9.09  | 0.72 | 0.68 | 5.63  | 0.29 | 0.24 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |        |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|--------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.37  | 0.25  | 0.55   | 0.81   | 0.80   | 0.34   | 0.33   | 0.54  | 0.28   | 0.14  |
| d, Delay for Lane Group [s/veh]       | 37.55 | 36.54 | 40.20  | 45.18  | 51.68  | 6.86   | 6.74   | 50.15 | 7.69   | 6.91  |
| Lane Group LOS                        | D     | D     | D      | D      | D      | A      | A      | D     | A      | A     |
| Critical Lane Group                   | No    | No    | No     | Yes    | No     | Yes    | No     | Yes   | No     | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.01  | 1.43  | 4.20   | 5.42   | 3.12   | 2.89   | 2.75   | 1.05  | 2.44   | 1.14  |
| 50th-Percentile Queue Length [ft/ln]  | 25.37 | 35.63 | 104.88 | 135.44 | 78.10  | 72.27  | 68.65  | 26.14 | 61.09  | 28.46 |
| 95th-Percentile Queue Length [veh/ln] | 1.83  | 2.57  | 7.55   | 9.23   | 5.62   | 5.20   | 4.94   | 1.88  | 4.40   | 2.05  |
| 95th-Percentile Queue Length [ft/ln]  | 45.66 | 64.13 | 188.79 | 230.87 | 140.57 | 130.08 | 123.58 | 47.05 | 109.97 | 51.24 |

**Movement, Approach, & Intersection Results**

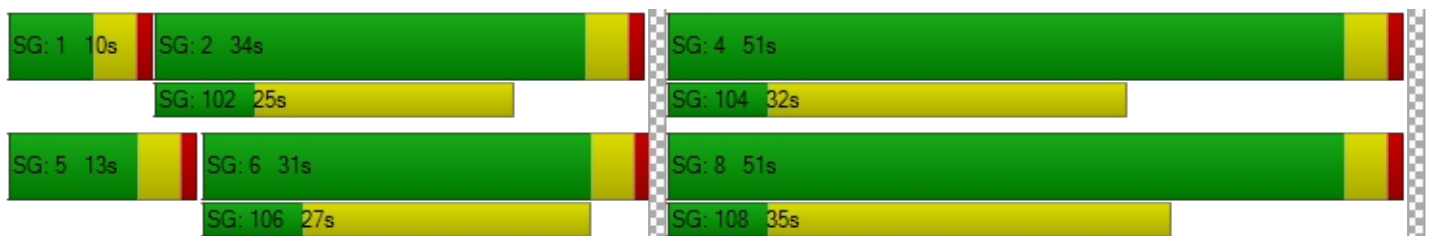
|                                 |       |       |       |       |       |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 37.55 | 36.54 | 36.54 | 40.20 | 40.20 | 45.18 | 51.68 | 6.81 | 6.74 | 50.15 | 7.69 | 6.91 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | A    | A    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 36.95 |       |       | 42.92 |       |       | 12.38 |      |      | 9.53  |      |      |
| Approach LOS                    | D     |       |       | D     |       |       | B     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 17.63 |       |       |       |       |       |       |      |      |       |      |      |
| Intersection LOS                | B     |       |       |       |       |       |       |      |      |       |      |      |
| Intersection V/C                | 0.431 |       |       |       |       |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.14 | 37.14 | 37.14 | 37.14 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.027 | 2.315 | 3.006 | 3.223 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 989   | 989   | 631   | 568   |
| d_b, Bicycle Delay [s]                                   | 12.13 | 12.13 | 22.24 | 24.34 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.749 | 2.233 | 2.389 | 2.300 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.0  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.776 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |



**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 864    | 11     | 5            | 1213   | 127    |
| Peak Hour Factor                            | 0.7500            | 0.7500 | 0.7500 | 0.8100            | 0.8100 | 0.8100 | 0.9290       | 0.9290 | 0.9290 | 0.9040       | 0.9040 | 0.9040 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 4                 | 1      | 3      | 30                | 1      | 85     | 71           | 233    | 3      | 1            | 335    | 35     |
| Total Analysis Volume [veh/h]               | 16                | 3      | 13     | 119               | 4      | 340    | 285          | 930    | 12     | 6            | 1342   | 140    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 34       | 56      | 0       | 10       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C    | C    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110  | 110  | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4     | 4     | 4     | 16    | 16    | 49    | 20    | 73   | 73   | 1     | 53    | 53    |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.03  | 0.15  | 0.15  | 0.44  | 0.18  | 0.66 | 0.66 | 0.01  | 0.49  | 0.49  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.00  | 0.01  | 0.03  | 0.03  | 0.18  | 0.16  | 0.25 | 0.25 | 0.00  | 0.35  | 0.07  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 101   | 67    | 67    | 269   | 269   | 840   | 333   | 1254 | 1254 | 18    | 1844  | 922   |
| d1, Uniform Delay [s]                   | 51.72 | 51.34 | 51.61 | 41.23 | 41.24 | 20.88 | 43.46 | 8.47 | 8.46 | 54.11 | 22.54 | 15.74 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.20  | 0.14  | 0.50 | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.72  | 0.28  | 1.41  | 0.43  | 0.43  | 0.58  | 8.21  | 0.86 | 0.86 | 9.93  | 2.55  | 0.35  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.16  | 0.05  | 0.20  | 0.23  | 0.23  | 0.40   | 0.86   | 0.38   | 0.37   | 0.33  | 0.73   | 0.15  |
| d, Delay for Lane Group [s/veh]       | 52.44 | 51.61 | 53.02 | 41.66 | 41.66 | 21.45  | 51.67  | 9.33   | 9.32   | 64.04 | 25.10  | 16.09 |
| Lane Group LOS                        | D     | D     | D     | D     | D     | C      | D      | A      | A      | E     | C      | B     |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | Yes    | Yes    | No     | No     | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.45  | 0.09  | 0.37  | 1.50  | 1.51  | 6.01   | 8.22   | 5.00   | 4.98   | 0.22  | 13.97  | 2.03  |
| 50th-Percentile Queue Length [ft/ln]  | 11.25 | 2.13  | 9.37  | 37.52 | 37.65 | 150.25 | 205.58 | 125.11 | 124.41 | 5.39  | 349.23 | 50.73 |
| 95th-Percentile Queue Length [veh/ln] | 0.81  | 0.15  | 0.67  | 2.70  | 2.71  | 10.03  | 12.93  | 8.67   | 8.63   | 0.39  | 20.10  | 3.65  |
| 95th-Percentile Queue Length [ft/ln]  | 20.26 | 3.83  | 16.86 | 67.54 | 67.76 | 250.77 | 323.15 | 216.83 | 215.87 | 9.70  | 502.47 | 91.32 |

**Movement, Approach, & Intersection Results**

|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.44 | 51.61 | 53.02 | 41.66 | 41.66 | 21.45 | 51.67 | 9.33 | 9.32 | 64.04 | 25.10 | 16.09 |
| Movement LOS                    | D     | D     | D     | D     | D     | C     | D     | A    | A    | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 52.60 |       |       | 26.82 |       |       | 19.16 |      |      | 24.41 |       |       |
| Approach LOS                    | D     |       |       | C     |       |       | B     |      |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 23.03 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.776 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.58 | 44.58 | 44.58 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.154 | 2.358 | 2.903 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 109   | 545   | 945   | 509   |
| d_b, Bicycle Delay [s]                                   | 49.19 | 29.11 | 15.31 | 30.59 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.612 | 2.324 | 2.572 | 2.787 |
| Bicycle LOS  | A     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 32: Voyager Avenue at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 7.1   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.331 |

**Intersection Setup**

| Name                         | Voyager Ave |        |        | Voyager Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|-------------|--------|--------|-------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           | ⇐⇑⇒         |        |        | ⇑⇒⇐         |        |        | ⇑⇒⇐       |        |        | ⇑⇒⇐       |        |        |
| Turning Movement             | Left        | Thru   | Right  | Left        | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1           | 0      | 0      | 0           | 0      | 1      | 1         | 0      | 0      | 1         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0           | 0      | 0      | 0           | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00        | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00       |        |        | 30.00       |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00        |        |        | 0.00        |        |        | 0.00      |        |        | 0.00      |        |        |
| Curb Present                 | No          |        |        | No          |        |        | No        |        |        | No        |        |        |
| Crosswalk                    | Yes         |        |        | Yes         |        |        | Yes       |        |        | Yes       |        |        |

**Volumes**

| Name  | Voyager Ave |        |        | Voyager Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|-------------|--------|--------|-------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]                   | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 848    | 10     | 2        | 641    | 11     |
| Base Volume Adjustment Factor               | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                               | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                      | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                        | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 848    | 10     | 2        | 641    | 11     |
| Peak Hour Factor                            | 0.7330      | 0.7330 | 0.7330 | 0.7000      | 0.7000 | 0.7000 | 0.9040   | 0.9040 | 0.9040 | 0.8270   | 0.8270 | 0.8270 |
| Other Adjustment Factor                     | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 16          | 0      | 13     | 4           | 0      | 6      | 7        | 235    | 3      | 1        | 194    | 3      |
| Total Analysis Volume [veh/h]               | 64          | 1      | 53     | 16          | 0      | 26     | 29       | 938    | 11     | 2        | 775    | 13     |
| Presence of On-Street Parking               | No          |        | No     | No          |        | No     | No       |        | No     | No       |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| Bicycle Volume [bicycles/h]                 | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 90                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 39      | 0       | 0       | 39      | 0       | 10       | 41      | 0       | 10       | 41      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 28      | 0       | 0       | 25      | 0       | 0        | 18      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 90    | 90    | 90    | 90    | 90    | 90   | 90   | 90    | 90   | 90   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6     | 6     | 6     | 6     | 3     | 72   | 72   | 0     | 69   | 69   |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.06  | 0.06  | 0.04  | 0.80 | 0.80 | 0.00  | 0.77 | 0.77 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.03  | 0.01  | 0.01  | 0.02  | 0.25 | 0.25 | 0.00  | 0.20 | 0.01 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 147   | 122   | 196   | 122   | 64    | 1516 | 1516 | 8     | 2914 | 1457 |
| d1, Uniform Delay [s]                   | 40.88 | 40.58 | 39.78 | 39.97 | 42.56 | 2.45 | 2.45 | 44.66 | 3.07 | 2.46 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 2.02  | 2.50  | 0.18  | 0.86  | 4.91  | 0.54 | 0.54 | 14.71 | 0.22 | 0.01 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |       |       |       |       |      |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| X, volume / capacity                  | 0.44  | 0.44  | 0.08  | 0.21  | 0.45  | 0.31  | 0.31  | 0.24  | 0.27  | 0.01 |
| d, Delay for Lane Group [s/veh]       | 42.90 | 43.08 | 39.96 | 40.83 | 47.47 | 2.99  | 2.99  | 59.37 | 3.30  | 2.47 |
| Lane Group LOS                        | D     | D     | D     | D     | D     | A     | A     | E     | A     | A    |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | Yes   | No    | Yes   | No    | No   |
| 50th-Percentile Queue Length [veh/ln] | 1.44  | 1.23  | 0.34  | 0.57  | 0.69  | 1.01  | 1.00  | 0.08  | 1.07  | 0.03 |
| 50th-Percentile Queue Length [ft/ln]  | 36.12 | 30.65 | 8.53  | 14.26 | 17.17 | 25.22 | 25.08 | 1.89  | 26.71 | 0.77 |
| 95th-Percentile Queue Length [veh/ln] | 2.60  | 2.21  | 0.61  | 1.03  | 1.24  | 1.82  | 1.81  | 0.14  | 1.92  | 0.06 |
| 95th-Percentile Queue Length [ft/ln]  | 65.02 | 55.16 | 15.35 | 25.67 | 30.91 | 45.40 | 45.15 | 3.41  | 48.08 | 1.39 |



**Movement, Approach, & Intersection Results**

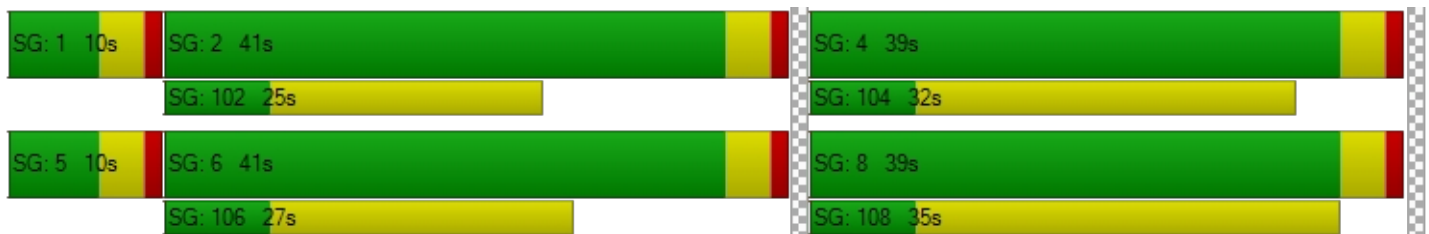
|                                 |       |       |       |       |       |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 42.90 | 43.08 | 43.08 | 39.96 | 39.96 | 40.83 | 47.47 | 2.99 | 2.99 | 59.37 | 3.30 | 2.47 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 42.98 |       |       | 40.50 |       |       | 4.31  |      |      | 3.43  |      |      |
| Approach LOS                    | D     |       |       | D     |       |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 7.10  |       |       |       |       |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |       |       |       |      |      |       |      |      |
| Intersection V/C                | 0.331 |       |       |       |       |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 34.68 | 34.68 | 34.68 | 34.68 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.982 | 2.151 | 2.989 | 2.962 |
| Crosswalk LOS  | A     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 778   | 778   | 822   | 822   |
| d_b, Bicycle Delay [s]                                   | 16.82 | 16.82 | 15.62 | 15.62 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.754 | 1.629 | 2.366 | 2.211 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



*APPENDIX K-IV*

**EXISTING PLUS PROJECT TRAFFIC CONDITIONS –  
HCM**

**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 25.5  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.722 |

**Intersection Setup**

| Name                         | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|------------------------------|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
| Approach                     | Northbound        |        |        | Southbound        |        |        | Eastbound    |        |        | Westbound    |        |        |
| Lane Configuration           | ↵↵↵               |        |        | ↵↵↵               |        |        | ↵↵↵          |        |        | ↵↵↵          |        |        |
| Turning Movement             | Left              | Thru   | Right  | Left              | Thru   | Right  | Left         | Thru   | Right  | Left         | Thru   | Right  |
| Lane Width [ft]              | 12.00             | 12.00  | 12.00  | 12.00             | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  | 12.00        | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1                 | 0      | 1      | 1                 | 0      | 1      | 1            | 0      | 0      | 1            | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00            | 100.00 | 100.00 | 100.00            | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 | 100.00       | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00              | 0.00   | 0.00   | 0.00              | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   | 0.00         | 0.00   | 0.00   |
| Speed [mph]                  | 30.00             |        |        | 30.00             |        |        | 30.00        |        |        | 30.00        |        |        |
| Grade [%]                    | 0.00              |        |        | 0.00              |        |        | 0.00         |        |        | 0.00         |        |        |
| Curb Present                 | No                |        |        | No                |        |        | No           |        |        | No           |        |        |
| Crosswalk                    | Yes               |        |        | Yes               |        |        | Yes          |        |        | No           |        |        |

**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 827    | 16     | 8            | 740    | 78     |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 3                 | 3      | 5      | 152               | 2      | 437    | 309          | 827    | 16     | 8            | 740    | 78     |
| Peak Hour Factor                            | 0.5500            | 0.5500 | 0.5500 | 0.8490            | 0.8490 | 0.8490 | 0.8890       | 0.8890 | 0.8890 | 0.8800       | 0.8800 | 0.8800 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 1                 | 1      | 2      | 45                | 1      | 129    | 87           | 233    | 4      | 2            | 210    | 22     |
| Total Analysis Volume [veh/h]               | 5                 | 5      | 9      | 179               | 2      | 515    | 348          | 930    | 18     | 9            | 841    | 89     |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 120                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 44       | 36      | 0       | 40       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C     | C     | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C, Cycle Length [s]                     | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   | 120   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 3     | 3     | 3     | 25    | 25    | 62    | 27    | 75    | 75    | 2     | 50    | 50    |
| g / C, Green / Cycle                    | 0.02  | 0.02  | 0.02  | 0.21  | 0.21  | 0.52  | 0.22  | 0.62  | 0.62  | 0.01  | 0.41  | 0.41  |
| (v / s)_i Volume / Saturation Flow Rate | 0.00  | 0.00  | 0.00  | 0.05  | 0.05  | 0.27  | 0.19  | 0.25  | 0.25  | 0.01  | 0.22  | 0.05  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900  | 1900  | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 79    | 46    | 46    | 370   | 370   | 986   | 401   | 1184  | 1184  | 25    | 1574  | 787   |
| d1, Uniform Delay [s]                   | 57.30 | 57.29 | 57.41 | 39.90 | 39.90 | 19.04 | 44.97 | 11.38 | 11.36 | 58.67 | 26.45 | 21.61 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50  | 0.15  | 0.50  | 0.50  | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.33  | 1.01  | 2.01  | 0.34  | 0.34  | 1.98  | 7.82  | 1.02  | 1.01  | 8.46  | 1.30  | 0.29  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |        |        |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.06  | 0.11  | 0.19  | 0.24   | 0.24   | 0.52   | 0.87   | 0.40   | 0.40   | 0.36  | 0.53   | 0.11  |
| d, Delay for Lane Group [s/veh]       | 57.63 | 58.30 | 59.42 | 40.24  | 40.24  | 21.02  | 52.80  | 12.40  | 12.37  | 67.12 | 27.75  | 21.90 |
| Lane Group LOS                        | E     | E     | E     | D      | D      | C      | D      | B      | B      | E     | C      | C     |
| Critical Lane Group                   | No    | No    | Yes   | No     | No     | Yes    | Yes    | No     | No     | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.16  | 0.16  | 0.29  | 2.28   | 2.28   | 9.84   | 10.81  | 6.47   | 6.41   | 0.33  | 9.27   | 1.62  |
| 50th-Percentile Queue Length [ft/ln]  | 3.90  | 4.04  | 7.35  | 57.06  | 57.11  | 245.92 | 270.27 | 161.64 | 160.35 | 8.26  | 231.76 | 40.43 |
| 95th-Percentile Queue Length [veh/ln] | 0.28  | 0.29  | 0.53  | 4.11   | 4.11   | 14.98  | 16.20  | 10.64  | 10.57  | 0.59  | 14.26  | 2.91  |
| 95th-Percentile Queue Length [ft/ln]  | 7.02  | 7.28  | 13.23 | 102.70 | 102.79 | 374.51 | 405.07 | 265.90 | 264.18 | 14.86 | 356.59 | 72.78 |

**Movement, Approach, & Intersection Results**

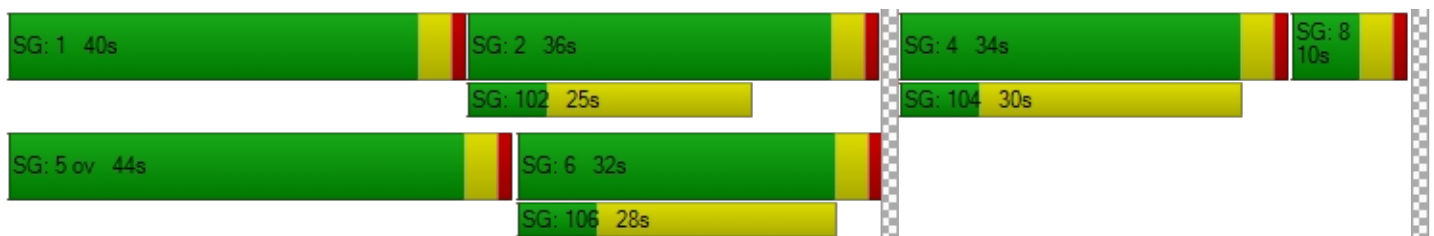
|                                 |       |       |       |       |       |       |       |       |       |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 57.63 | 58.30 | 59.42 | 40.24 | 40.24 | 21.02 | 52.80 | 12.38 | 12.37 | 67.12 | 27.75 | 21.90 |
| Movement LOS                    | E     | E     | E     | D     | D     | C     | D     | B     | B     | E     | C     | C     |
| d_A, Approach Delay [s/veh]     | 58.66 |       |       | 26.02 |       |       | 23.24 |       |       | 27.58 |       |       |
| Approach LOS                    | E     |       |       | C     |       |       | C     |       |       | C     |       |       |
| d_I, Intersection Delay [s/veh] | 25.50 |       |       |       |       |       |       |       |       |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |       |       |       |       |       |
| Intersection V/C                | 0.722 |       |       |       |       |       |       |       |       |       |       |       |

**Other Modes**

|  |       |  |  |       |  |  |       |  |  |       |  |  |
|--|-------|--|--|-------|--|--|-------|--|--|-------|--|--|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  |  |  | 11.0  |  |  | 11.0  |  |  | 0.0   |  |  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  | 0.00  |  |  |
| d_p, Pedestrian Delay [s]                                | 49.52 |  |  | 49.52 |  |  | 49.52 |  |  | 0.00  |  |  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.157 |  |  | 2.422 |  |  | 2.839 |  |  | 0.000 |  |  |
| Crosswalk LOS  | B     |  |  | B     |  |  | C     |  |  | F     |  |  |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  |  |  | 2000  |  |  | 2000  |  |  | 2000  |  |  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 100   |  |  | 500   |  |  | 533   |  |  | 467   |  |  |
| d_b, Bicycle Delay [s]                                   | 54.17 |  |  | 33.76 |  |  | 32.28 |  |  | 35.28 |  |  |
| I_b,int, Bicycle LOS Score for Intersection              | 1.591 |  |  | 2.708 |  |  | 2.629 |  |  | 2.334 |  |  |
| Bicycle LOS  | A     |  |  | B     |  |  | B     |  |  | B     |  |  |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 32: Voyager Avenue at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 17.6  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | B     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.431 |

**Intersection Setup**

| Name                         | Voyager Ave |        |        | Voyager Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|-------------|--------|--------|-------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           |             |        |        |             |        |        |           |        |        |           |        |        |
| Turning Movement             | Left        | Thru   | Right  | Left        | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1           | 0      | 0      | 0           | 0      | 1      | 1         | 0      | 0      | 1         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0           | 0      | 0      | 0           | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00        | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00       |        |        | 30.00       |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00        |        |        | 0.00        |        |        | 0.00      |        |        | 0.00      |        |        |
| Curb Present                 | No          |        |        | No          |        |        | No        |        |        | No        |        |        |
| Crosswalk                    | Yes         |        |        | Yes         |        |        | Yes       |        |        | Yes       |        |        |



**Volumes**

| Name  | Voyager Ave |        |        | Voyager Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|-------------|--------|--------|-------------|--------|--------|----------|--------|--------|----------|--------|--------|
| Base Volume Input [veh/h]                   | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 595    | 74     | 31       | 508    | 127    |
| Base Volume Adjustment Factor               | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                               | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                      | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                        | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 27          | 23     | 16     | 75          | 2      | 93     | 95       | 595    | 74     | 31       | 508    | 127    |
| Peak Hour Factor                            | 0.5710      | 0.5710 | 0.5710 | 0.4170      | 0.4170 | 0.4170 | 0.7600   | 0.7600 | 0.7600 | 0.7430   | 0.7430 | 0.7430 |
| Other Adjustment Factor                     | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 12          | 10     | 7      | 45          | 1      | 56     | 31       | 196    | 24     | 10       | 171    | 43     |
| Total Analysis Volume [veh/h]               | 47          | 40     | 28     | 180         | 5      | 223    | 125      | 783    | 97     | 42       | 684    | 171    |
| Presence of On-Street Parking               | No          |        | No     | No          |        | No     | No       |        | No     | No       |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| Bicycle Volume [bicycles/h]                 | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 51      | 0       | 0       | 51      | 0       | 13       | 34      | 0       | 10       | 31      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 28      | 0       | 0       | 25      | 0       | 0        | 18      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95   | 95   | 95    | 95   | 95   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 14    | 14    | 14    | 14    | 8     | 65   | 65   | 4     | 61   | 61   |
| g / C, Green / Cycle                    | 0.14  | 0.14  | 0.14  | 0.14  | 0.09  | 0.69 | 0.69 | 0.04  | 0.64 | 0.64 |
| (v / s)_i Volume / Saturation Flow Rate | 0.03  | 0.04  | 0.10  | 0.12  | 0.07  | 0.24 | 0.23 | 0.02  | 0.18 | 0.09 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 126   | 274   | 335   | 274   | 156   | 1303 | 1303 | 78    | 2442 | 1221 |
| d1, Uniform Delay [s]                   | 35.72 | 36.08 | 38.77 | 39.41 | 42.59 | 6.13 | 6.06 | 44.52 | 7.40 | 6.67 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 1.83  | 0.47  | 1.43  | 5.77  | 9.09  | 0.72 | 0.68 | 5.63  | 0.29 | 0.24 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |        |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|--------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.37  | 0.25  | 0.55   | 0.81   | 0.80   | 0.34   | 0.33   | 0.54  | 0.28   | 0.14  |
| d, Delay for Lane Group [s/veh]       | 37.55 | 36.54 | 40.20  | 45.18  | 51.68  | 6.86   | 6.74   | 50.15 | 7.69   | 6.91  |
| Lane Group LOS                        | D     | D     | D      | D      | D      | A      | A      | D     | A      | A     |
| Critical Lane Group                   | No    | No    | No     | Yes    | No     | Yes    | No     | Yes   | No     | No    |
| 50th-Percentile Queue Length [veh/ln] | 1.01  | 1.43  | 4.20   | 5.42   | 3.12   | 2.89   | 2.75   | 1.05  | 2.44   | 1.14  |
| 50th-Percentile Queue Length [ft/ln]  | 25.37 | 35.63 | 104.88 | 135.44 | 78.10  | 72.27  | 68.65  | 26.14 | 61.09  | 28.46 |
| 95th-Percentile Queue Length [veh/ln] | 1.83  | 2.57  | 7.55   | 9.23   | 5.62   | 5.20   | 4.94   | 1.88  | 4.40   | 2.05  |
| 95th-Percentile Queue Length [ft/ln]  | 45.66 | 64.13 | 188.79 | 230.87 | 140.57 | 130.08 | 123.58 | 47.05 | 109.97 | 51.24 |

**Movement, Approach, & Intersection Results**

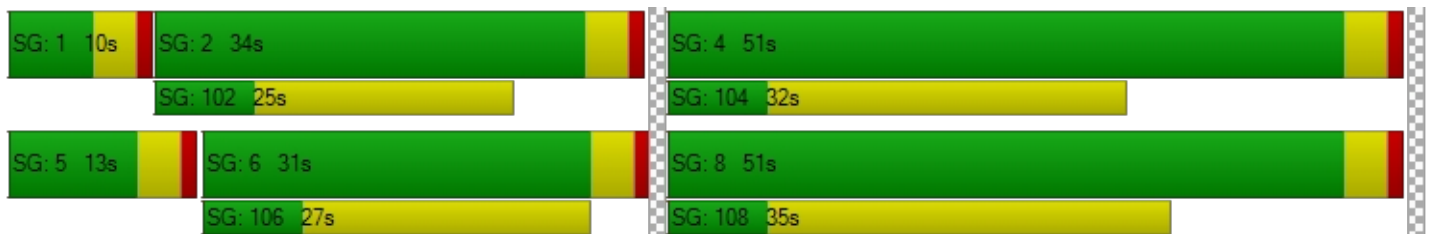
|                                 |       |       |       |       |       |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 37.55 | 36.54 | 36.54 | 40.20 | 40.20 | 45.18 | 51.68 | 6.81 | 6.74 | 50.15 | 7.69 | 6.91 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | A    | A    | D     | A    | A    |
| d_A, Approach Delay [s/veh]     | 36.95 |       |       | 42.92 |       |       | 12.38 |      |      | 9.53  |      |      |
| Approach LOS                    | D     |       |       | D     |       |       | B     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 17.63 |       |       |       |       |       |       |      |      |       |      |      |
| Intersection LOS                | B     |       |       |       |       |       |       |      |      |       |      |      |
| Intersection V/C                | 0.431 |       |       |       |       |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.14 | 37.14 | 37.14 | 37.14 |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.027 | 2.315 | 3.006 | 3.223 |
| Crosswalk LOS  | B     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 989   | 989   | 631   | 568   |
| d_b, Bicycle Delay [s]                                   | 12.13 | 12.13 | 22.24 | 24.34 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.749 | 2.233 | 2.389 | 2.300 |
| Bicycle LOS  | A     | B     | B     | B     |

**Sequence**





|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 12: N Associated Road at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 23.1  |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | C     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.786 |

**Intersection Setup**

| Name                         | N Associated Road   |        |        | N Associated Road   |        |        | Birch Street  |        |        | Birch Street  |        |        |
|------------------------------|---|--------|--------|---|--------|--------|---|--------|--------|---|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound   |        |        | Westbound   |        |        |
| Lane Configuration           |  |        |        |  |        |        |  |        |        |  |        |        |
| Turning Movement             | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  | Left  | Thru   | Right  |
| Lane Width [ft]              | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  | 12.00   | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1   | 0      | 1      | 1   | 0      | 1      | 1   | 0      | 0      | 1   | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 | 100.00  | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      | 0   | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   | 0.00  | 0.00   | 0.00   |
| Speed [mph]                  | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        | 30.00   |        |        |
| Grade [%]                    | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        | 0.00  |        |        |
| Curb Present                 | No  |        |        | No  |        |        | No  |        |        | No  |        |        |
| Crosswalk                    | Yes   |        |        | Yes   |        |        | Yes   |        |        | No  |        |        |

**Volumes**

| Name  | N Associated Road |        |        | N Associated Road |        |        | Birch Street |        |        | Birch Street |        |        |
|---|-------------------|--------|--------|-------------------|--------|--------|--------------|--------|--------|--------------|--------|--------|
|   |                   |        |        |                   |        |        |              |        |        |              |        |        |
| Base Volume Input [veh/h]                   | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 911    | 11     | 5            | 1243   | 127    |
| Base Volume Adjustment Factor               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00              | 2.00   | 2.00   | 2.00              | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   | 2.00         | 2.00   | 2.00   |
| Growth Factor                               | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Diverted Trips [veh/h]                      | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Other Volume [veh/h]                        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 12                | 2      | 10     | 96                | 3      | 275    | 265          | 911    | 11     | 5            | 1243   | 127    |
| Peak Hour Factor                            | 0.7500            | 0.7500 | 0.7500 | 0.8100            | 0.8100 | 0.8100 | 0.9290       | 0.9290 | 0.9290 | 0.9040       | 0.9040 | 0.9040 |
| Other Adjustment Factor                     | 1.0000            | 1.0000 | 1.0000 | 1.0000            | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 | 1.0000       | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 4                 | 1      | 3      | 30                | 1      | 85     | 71           | 245    | 3      | 1            | 344    | 35     |
| Total Analysis Volume [veh/h]               | 16                | 3      | 13     | 119               | 4      | 340    | 285          | 981    | 12     | 6            | 1375   | 140    |
| Presence of On-Street Parking               | No                |        | No     | No                |        | No     | No           |        | No     | No           |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0                 | 0      | 0      | 0                 | 0      | 0      | 0            | 0      | 0      | 0            | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |
| Bicycle Volume [bicycles/h]                 | 0                 |        |        | 0                 |        |        | 0            |        |        | 0            |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 110                                   |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 16.00                                 |

**Phasing & Timing**

| Control Type                 | Split | Split | Split | Split | Split | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|-------|-------|-------|-------|-------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0     | 8     | 0     | 0     | 4     | 4       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |       |       |       |       |       | 4,5     |          |         |         |          |         |         |
| Lead / Lag                   | -     | -     | -     | -     | -     | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0     | 6     | 0     | 0     | 6     | 6       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0     | 30    | 0     | 0     | 30    | 30      | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0   | 1.0   | 0.0   | 0.0   | 1.0   | 1.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0     | 10    | 0     | 0     | 34    | 34      | 34       | 56      | 0       | 10       | 32      | 0       |
| Vehicle Extension [s]        | 0.0   | 3.0   | 0.0   | 0.0   | 3.0   | 3.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0     | 0     | 0     | 0     | 7     | 7       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0     | 0     | 0     | 0     | 23    | 23      | 0        | 18      | 0       | 0        | 21      | 0       |
| Delayed Vehicle Green [s]    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |       | No    |       |       | No    |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0   | 2.0   | 0.0   | 0.0   | 2.0   | 2.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Maximum Recall               |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |       | No    |       |       | No    | No      | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | R     | L     | C     | R     | L     | C    | C    | L     | C     | R     |
|---|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| C, Cycle Length [s]                     | 110   | 110   | 110   | 110   | 110   | 110   | 110   | 110  | 110  | 110   | 110   | 110   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00  | 4.00  |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 0.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00  | 2.00  |
| g_i, Effective Green Time [s]           | 4     | 4     | 4     | 16    | 16    | 49    | 20    | 73   | 73   | 1     | 53    | 53    |
| g / C, Green / Cycle                    | 0.03  | 0.03  | 0.03  | 0.15  | 0.15  | 0.44  | 0.18  | 0.66 | 0.66 | 0.01  | 0.49  | 0.49  |
| (v / s)_i Volume / Saturation Flow Rate | 0.01  | 0.00  | 0.01  | 0.03  | 0.03  | 0.18  | 0.16  | 0.26 | 0.26 | 0.00  | 0.36  | 0.07  |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1900  | 1800  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800  | 1900  |
| c, Capacity [veh/h]                     | 101   | 67    | 67    | 269   | 269   | 840   | 333   | 1254 | 1254 | 18    | 1844  | 922   |
| d1, Uniform Delay [s]                   | 51.72 | 51.34 | 51.61 | 41.23 | 41.24 | 20.88 | 43.46 | 8.62 | 8.61 | 54.11 | 22.85 | 15.74 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.20  | 0.14  | 0.50 | 0.50 | 0.11  | 0.50  | 0.50  |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| d2, Incremental Delay [s]               | 0.72  | 0.28  | 1.41  | 0.43  | 0.43  | 0.58  | 8.21  | 0.94 | 0.93 | 9.93  | 2.79  | 0.35  |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00  | 0.00  |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00  | 1.00  |

**Lane Group Results**

|                                       |       |       |       |       |       |        |        |        |        |       |        |       |
|---------------------------------------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|--------|-------|
| X, volume / capacity                  | 0.16  | 0.05  | 0.20  | 0.23  | 0.23  | 0.40   | 0.86   | 0.40   | 0.40   | 0.33  | 0.75   | 0.15  |
| d, Delay for Lane Group [s/veh]       | 52.44 | 51.61 | 53.02 | 41.66 | 41.66 | 21.45  | 51.67  | 9.56   | 9.55   | 64.04 | 25.64  | 16.09 |
| Lane Group LOS                        | D     | D     | D     | D     | D     | C      | D      | A      | A      | E     | C      | B     |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | Yes    | Yes    | No     | No     | No    | Yes    | No    |
| 50th-Percentile Queue Length [veh/ln] | 0.45  | 0.09  | 0.37  | 1.50  | 1.51  | 6.01   | 8.22   | 5.38   | 5.35   | 0.22  | 14.54  | 2.03  |
| 50th-Percentile Queue Length [ft/ln]  | 11.25 | 2.13  | 9.37  | 37.52 | 37.65 | 150.25 | 205.58 | 134.38 | 133.67 | 5.39  | 363.58 | 50.73 |
| 95th-Percentile Queue Length [veh/ln] | 0.81  | 0.15  | 0.67  | 2.70  | 2.71  | 10.03  | 12.93  | 9.18   | 9.14   | 0.39  | 20.80  | 3.65  |
| 95th-Percentile Queue Length [ft/ln]  | 20.26 | 3.83  | 16.86 | 67.54 | 67.76 | 250.77 | 323.15 | 229.43 | 228.47 | 9.70  | 519.93 | 91.32 |



**Movement, Approach, & Intersection Results**

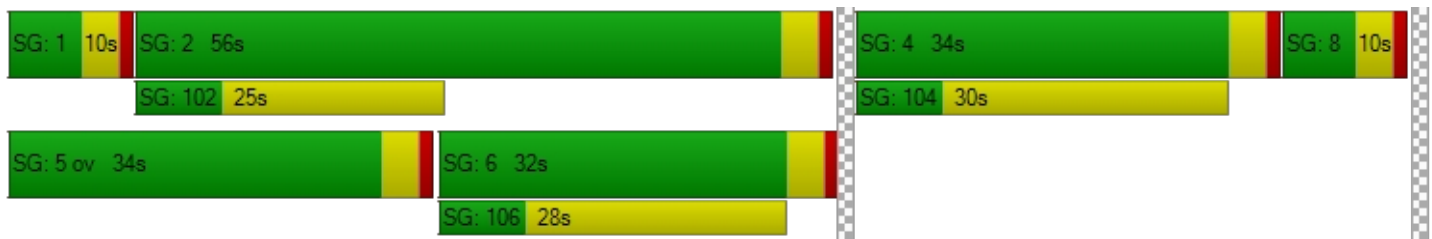
|                                 |       |       |       |       |       |       |       |      |      |       |       |       |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|-------|
| d_M, Delay for Movement [s/veh] | 52.44 | 51.61 | 53.02 | 41.66 | 41.66 | 21.45 | 51.67 | 9.56 | 9.55 | 64.04 | 25.64 | 16.09 |
| Movement LOS                    | D     | D     | D     | D     | D     | C     | D     | A    | A    | E     | C     | B     |
| d_A, Approach Delay [s/veh]     | 52.60 |       |       | 26.82 |       |       | 18.95 |      |      | 24.91 |       |       |
| Approach LOS                    | D     |       |       | C     |       |       | B     |      |      | C     |       |       |
| d_I, Intersection Delay [s/veh] | 23.14 |       |       |       |       |       |       |      |      |       |       |       |
| Intersection LOS                | C     |       |       |       |       |       |       |      |      |       |       |       |
| Intersection V/C                | 0.786 |       |       |       |       |       |       |      |      |       |       |       |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 0.0   |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 44.58 | 44.58 | 44.58 | 0.00  |
| I_p,int, Pedestrian LOS Score for Intersection           | 2.154 | 2.358 | 2.919 | 0.000 |
| Crosswalk LOS  | B     | B     | C     | F     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 109   | 545   | 945   | 509   |
| d_b, Bicycle Delay [s]                                   | 49.19 | 29.11 | 15.31 | 30.59 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.612 | 2.324 | 2.614 | 2.814 |
| Bicycle LOS  | A     | B     | B     | C     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**  
**Intersection 32: Voyager Avenue at Birch Street**

|                  |                 |                           |       |
|------------------|-----------------|---------------------------|-------|
| Control Type:    | Signalized      | Delay (sec / veh):        | 7.1   |
| Analysis Method: | HCM 6th Edition | Level Of Service:         | A     |
| Analysis Period: | 15 minutes      | Volume to Capacity (v/c): | 0.348 |

**Intersection Setup**

| Name                         | Voyager Ave |        |        | Voyager Ave |        |        | Birch St  |        |        | Birch St  |        |        |
|------------------------------|-------------|--------|--------|-------------|--------|--------|-----------|--------|--------|-----------|--------|--------|
| Approach                     | Northbound  |        |        | Southbound  |        |        | Eastbound |        |        | Westbound |        |        |
| Lane Configuration           |             |        |        |             |        |        |           |        |        |           |        |        |
| Turning Movement             | Left        | Thru   | Right  | Left        | Thru   | Right  | Left      | Thru   | Right  | Left      | Thru   | Right  |
| Lane Width [ft]              | 12.00       | 12.00  | 12.00  | 12.00       | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  | 12.00     | 12.00  | 12.00  |
| No. of Lanes in Entry Pocket | 1           | 0      | 0      | 0           | 0      | 1      | 1         | 0      | 0      | 1         | 0      | 1      |
| Entry Pocket Length [ft]     | 100.00      | 100.00 | 100.00 | 100.00      | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 | 100.00    | 100.00 | 100.00 |
| No. of Lanes in Exit Pocket  | 0           | 0      | 0      | 0           | 0      | 0      | 0         | 0      | 0      | 0         | 0      | 0      |
| Exit Pocket Length [ft]      | 0.00        | 0.00   | 0.00   | 0.00        | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   | 0.00      | 0.00   | 0.00   |
| Speed [mph]                  | 30.00       |        |        | 30.00       |        |        | 50.00     |        |        | 50.00     |        |        |
| Grade [%]                    | 0.00        |        |        | 0.00        |        |        | 0.00      |        |        | 0.00      |        |        |
| Curb Present                 | No          |        |        | No          |        |        | No        |        |        | No        |        |        |
| Crosswalk                    | Yes         |        |        | Yes         |        |        | Yes       |        |        | Yes       |        |        |

**Volumes**

| Name  | Voyager Ave |        |        | Voyager Ave |        |        | Birch St |        |        | Birch St |        |        |
|---|-------------|--------|--------|-------------|--------|--------|----------|--------|--------|----------|--------|--------|
|   |             |        |        |             |        |        |          |        |        |          |        |        |
| Base Volume Input [veh/h]                   | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 908    | 10     | 2        | 680    | 11     |
| Base Volume Adjustment Factor               | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%]               | 2.00        | 2.00   | 2.00   | 2.00        | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   | 2.00     | 2.00   | 2.00   |
| Growth Factor                               | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| In-Process Volume [veh/h]                   | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Site-Generated Trips [veh/h]                | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Diverted Trips [veh/h]                      | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Pass-by Trips [veh/h]                       | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Existing Site Adjustment Volume [veh/h]     | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Other Volume [veh/h]                        | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Right Turn on Red Volume [veh/h]            | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Total Hourly Volume [veh/h]                 | 47          | 1      | 39     | 11          | 0      | 18     | 26       | 908    | 10     | 2        | 680    | 11     |
| Peak Hour Factor                            | 0.7330      | 0.7330 | 0.7330 | 0.7000      | 0.7000 | 0.7000 | 0.9040   | 0.9040 | 0.9040 | 0.8270   | 0.8270 | 0.8270 |
| Other Adjustment Factor                     | 1.0000      | 1.0000 | 1.0000 | 1.0000      | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 | 1.0000   | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h]              | 16          | 0      | 13     | 4           | 0      | 6      | 7        | 251    | 3      | 1        | 206    | 3      |
| Total Analysis Volume [veh/h]               | 64          | 1      | 53     | 16          | 0      | 26     | 29       | 1004   | 11     | 2        | 822    | 13     |
| Presence of On-Street Parking               | No          |        | No     | No          |        | No     | No       |        | No     | No       |        | No     |
| On-Street Parking Maneuver Rate [/h]        | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| Local Bus Stopping Rate [/h]                | 0           | 0      | 0      | 0           | 0      | 0      | 0        | 0      | 0      | 0        | 0      | 0      |
| v_do, Outbound Pedestrian Volume crossing   | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_di, Inbound Pedestrian Volume crossing in | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_co, Outbound Pedestrian Volume crossing   | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_ci, Inbound Pedestrian Volume crossing mi | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| v_ab, Corner Pedestrian Volume [ped/h]      | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |
| Bicycle Volume [bicycles/h]                 | 0           |        |        | 0           |        |        | 0        |        |        | 0        |        |        |

**Intersection Settings**

|                           |                                       |
|---------------------------|---------------------------------------|
| Located in CBD            | No                                    |
| Signal Coordination Group | -                                     |
| Cycle Length [s]          | 95                                    |
| Coordination Type         | Time of Day Pattern Coordinated       |
| Actuation Type            | Fully actuated                        |
| Offset [s]                | 0.0                                   |
| Offset Reference          | Lead Green - Beginning of First Green |
| Permissive Mode           | SingleBand                            |
| Lost time [s]             | 12.00                                 |

**Phasing & Timing**

| Control Type                 | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|------------------------------|---------|---------|---------|---------|---------|---------|----------|---------|---------|----------|---------|---------|
| Signal Group                 | 0       | 8       | 0       | 0       | 4       | 0       | 5        | 2       | 0       | 1        | 6       | 0       |
| Auxiliary Signal Groups      |         |         |         |         |         |         |          |         |         |          |         |         |
| Lead / Lag                   | -       | -       | -       | -       | -       | -       | Lead     | -       | -       | Lead     | -       | -       |
| Minimum Green [s]            | 0       | 6       | 0       | 0       | 6       | 0       | 6        | 6       | 0       | 6        | 6       | 0       |
| Maximum Green [s]            | 0       | 30      | 0       | 0       | 30      | 0       | 30       | 30      | 0       | 30       | 30      | 0       |
| Amber [s]                    | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| All red [s]                  | 0.0     | 1.0     | 0.0     | 0.0     | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     | 1.0      | 1.0     | 0.0     |
| Split [s]                    | 0       | 39      | 0       | 0       | 39      | 0       | 10       | 46      | 0       | 10       | 46      | 0       |
| Vehicle Extension [s]        | 0.0     | 3.0     | 0.0     | 0.0     | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     | 3.0      | 3.0     | 0.0     |
| Walk [s]                     | 0       | 7       | 0       | 0       | 7       | 0       | 0        | 7       | 0       | 0        | 7       | 0       |
| Pedestrian Clearance [s]     | 0       | 28      | 0       | 0       | 25      | 0       | 0        | 18      | 0       | 0        | 20      | 0       |
| Delayed Vehicle Green [s]    | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Rest In Walk                 |         | No      |         |         | No      |         |          | No      |         |          | No      |         |
| I1, Start-Up Lost Time [s]   | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| I2, Clearance Lost Time [s]  | 0.0     | 2.0     | 0.0     | 0.0     | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     | 2.0      | 2.0     | 0.0     |
| Minimum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Maximum Recall               |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Pedestrian Recall            |         | No      |         |         | No      |         | No       | No      |         | No       | No      |         |
| Detector Location [ft]       | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| Detector Length [ft]         | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     | 0.0      | 0.0     | 0.0     |
| I, Upstream Filtering Factor | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    | 1.00     | 1.00    | 1.00    |

**Exclusive Pedestrian Phase**

|                          |   |
|--------------------------|---|
| Pedestrian Signal Group  | 0 |
| Pedestrian Walk [s]      | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group                              | L     | C     | C     | R     | L     | C    | C    | L     | C    | R    |
|---|-------|-------|-------|-------|-------|------|------|-------|------|------|
| C, Cycle Length [s]                     | 95    | 95    | 95    | 95    | 95    | 95   | 95   | 95    | 95   | 95   |
| L, Total Lost Time per Cycle [s]        | 4.00  | 4.00  | 4.00  | 4.00  | 4.00  | 4.00 | 4.00 | 4.00  | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s]  | 2.00  | 0.00  | 2.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| l2, Clearance Lost Time [s]             | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00 | 2.00 | 2.00  | 2.00 | 2.00 |
| g_i, Effective Green Time [s]           | 6     | 6     | 6     | 6     | 3     | 77   | 77   | 0     | 74   | 74   |
| g / C, Green / Cycle                    | 0.06  | 0.06  | 0.06  | 0.06  | 0.03  | 0.81 | 0.81 | 0.00  | 0.78 | 0.78 |
| (v / s)_i Volume / Saturation Flow Rate | 0.04  | 0.03  | 0.01  | 0.01  | 0.02  | 0.27 | 0.27 | 0.00  | 0.22 | 0.01 |
| s, saturation flow rate [veh/h]         | 1800  | 1900  | 1800  | 1900  | 1800  | 1900 | 1900 | 1800  | 3800 | 1900 |
| c, Capacity [veh/h]                     | 139   | 117   | 186   | 117   | 63    | 1535 | 1535 | 8     | 2954 | 1477 |
| d1, Uniform Delay [s]                   | 43.41 | 43.09 | 42.24 | 42.44 | 44.98 | 2.39 | 2.39 | 47.14 | 3.00 | 2.37 |
| k, delay calibration                    | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.50 | 0.50 | 0.11  | 0.50 | 0.50 |
| l, Upstream Filtering Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| d2, Incremental Delay [s]               | 2.35  | 2.85  | 0.20  | 0.96  | 5.19  | 0.58 | 0.58 | 15.28 | 0.23 | 0.01 |
| d3, Initial Queue Delay [s]             | 0.00  | 0.00  | 0.00  | 0.00  | 0.00  | 0.00 | 0.00 | 0.00  | 0.00 | 0.00 |
| Rp, platoon ratio                       | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |
| PF, progression factor                  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00 | 1.00 | 1.00  | 1.00 | 1.00 |

**Lane Group Results**

|                                       |       |       |       |       |       |       |       |       |       |      |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| X, volume / capacity                  | 0.46  | 0.46  | 0.09  | 0.22  | 0.46  | 0.33  | 0.33  | 0.25  | 0.28  | 0.01 |
| d, Delay for Lane Group [s/veh]       | 45.75 | 45.93 | 42.43 | 43.40 | 50.17 | 2.97  | 2.97  | 62.42 | 3.24  | 2.38 |
| Lane Group LOS                        | D     | D     | D     | D     | D     | A     | A     | E     | A     | A    |
| Critical Lane Group                   | Yes   | No    | No    | No    | No    | Yes   | No    | Yes   | No    | No   |
| 50th-Percentile Queue Length [veh/ln] | 1.54  | 1.31  | 0.36  | 0.61  | 0.73  | 1.11  | 1.11  | 0.08  | 1.17  | 0.03 |
| 50th-Percentile Queue Length [ft/ln]  | 38.61 | 32.74 | 9.09  | 15.21 | 18.25 | 27.85 | 27.70 | 1.98  | 29.33 | 0.78 |
| 95th-Percentile Queue Length [veh/ln] | 2.78  | 2.36  | 0.65  | 1.09  | 1.31  | 2.01  | 1.99  | 0.14  | 2.11  | 0.06 |
| 95th-Percentile Queue Length [ft/ln]  | 69.49 | 58.93 | 16.37 | 27.37 | 32.85 | 50.13 | 49.86 | 3.56  | 52.79 | 1.41 |

**Movement, Approach, & Intersection Results**

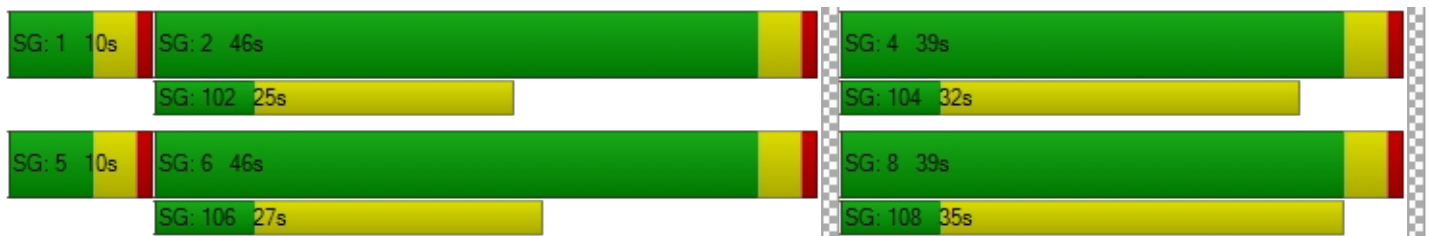
|                                 |       |       |       |       |       |       |       |      |      |       |      |      |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|------|------|
| d_M, Delay for Movement [s/veh] | 45.75 | 45.93 | 45.93 | 42.43 | 42.43 | 43.40 | 50.17 | 2.97 | 2.97 | 62.42 | 3.24 | 2.38 |
| Movement LOS                    | D     | D     | D     | D     | D     | D     | D     | A    | A    | E     | A    | A    |
| d_A, Approach Delay [s/veh]     | 45.84 |       |       | 43.03 |       |       | 4.28  |      |      | 3.37  |      |      |
| Approach LOS                    | D     |       |       | D     |       |       | A     |      |      | A     |      |      |
| d_I, Intersection Delay [s/veh] | 7.11  |       |       |       |       |       |       |      |      |       |      |      |
| Intersection LOS                | A     |       |       |       |       |       |       |      |      |       |      |      |
| Intersection V/C                | 0.348 |       |       |       |       |       |       |      |      |       |      |      |

**Other Modes**

|  |       |       |       |       |
|--|-------|-------|-------|-------|
| g_Walk,mi, Effective Walk Time [s]                       | 11.0  | 11.0  | 11.0  | 11.0  |
| M_corner, Corner Circulation Area [ft <sup>2</sup> /ped] | 0.00  | 0.00  | 0.00  | 0.00  |
| M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]  | 0.00  | 0.00  | 0.00  | 0.00  |
| d_p, Pedestrian Delay [s]                                | 37.14 | 37.14 | 37.14 | 37.14 |
| I_p,int, Pedestrian LOS Score for Intersection           | 1.985 | 2.154 | 3.029 | 2.995 |
| Crosswalk LOS  | A     | B     | C     | C     |
| s_b, Saturation Flow Rate of the bicycle lane            | 2000  | 2000  | 2000  | 2000  |
| c_b, Capacity of the bicycle lane [bicycles/h]           | 737   | 737   | 884   | 884   |
| d_b, Bicycle Delay [s]                                   | 18.95 | 18.95 | 14.79 | 14.79 |
| I_b,int, Bicycle LOS Score for Intersection              | 1.754 | 1.629 | 2.421 | 2.250 |
| Bicycle LOS  | A     | A     | B     | B     |

**Sequence**

|        |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|--------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 1 | 2 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |


























*APPENDIX K-V*

**EXISTING TRAFFIC CONDITIONS –  
SYNCHRO QUEUEING**

Lanes, Volumes, Timings  
12: N Associated Road & Birch Street

AM Existing  
AM Existing

|                            |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations        |  |  |   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)       | 309   | 810   | 16  | 8   | 696   | 78  | 3  | 3   | 5   | 152   | 2   | 437   |
| Future Volume (vph)        | 309   | 810   | 16  | 8   | 696   | 78  | 3  | 3   | 5   | 152   | 2   | 437   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800   | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 195   |   | 0   | 200   |   | 200   | 120  |   | 65  | 205   |   | 0   |
| Storage Lanes              | 1   |   | 0   | 1   |   | 1   | 1  |   | 1   | 1   |   | 1   |
| Taper Length (ft)          | 90  |   |   | 90  |   |   | 90   |   |   | 90  |   |   |
| Lane Util. Factor          | 1.00  | 0.95  | 0.95  | 1.00  | 0.95  | 1.00  | 1.00   | 1.00  | 1.00  | 0.95  | 0.95  | 1.00  |
| Frt                        |   | 0.997   |   |   |   | 0.850   |  |   | 0.850   |   |   | 0.850   |
| Flt Protected              | 0.950   |   |   | 0.950   |   |   | 0.950  |   |   | 0.950   | 0.953   |   |
| Satd. Flow (prot)          | 1676  | 3343  | 0   | 1676  | 3353  | 1500  | 1676   | 1765  | 1500  | 1593  | 1598  | 1500  |
| Flt Permitted              | 0.950   |   |   | 0.950   |   |   | 0.950  |   |   | 0.950   | 0.953   |   |
| Satd. Flow (perm)          | 1676  | 3343  | 0   | 1676  | 3353  | 1500  | 1676   | 1765  | 1500  | 1593  | 1598  | 1500  |
| Right Turn on Red          |   |   | Yes   |   |   | Yes   |  |   | Yes   |   |   | Yes   |
| Satd. Flow (RTOR)          |   | 2   |   |   |   | 100   |  |   | 145   |   |   | 185   |
| Link Speed (mph)           |   | 30  |   |   | 30  |   |  | 30  |   |   | 30  |   |
| Link Distance (ft)         |   | 1708  |   |   | 1966  |   |  | 417   |   |   | 1375  |   |
| Travel Time (s)            |   | 38.8  |   |   | 44.7  |   |  | 9.5   |   |   | 31.3  |   |
| Peak Hour Factor           | 0.89  | 0.89  | 0.89  | 0.88  | 0.88  | 0.88  | 0.55   | 0.55  | 0.55  | 0.85  | 0.85  | 0.85  |
| Adj. Flow (vph)            | 347   | 910   | 18  | 9   | 791   | 89  | 5  | 5   | 9   | 179   | 2   | 514   |
| Shared Lane Traffic (%)    |   |   |   |   |   |   |  |   |   | 49%   |   |   |
| Lane Group Flow (vph)      | 347   | 928   | 0   | 9   | 791   | 89  | 5  | 5   | 9   | 91  | 90  | 514   |
| Enter Blocked Intersection | No  | No  | No  | No  | No  | No  | No   | No  | No  | No  | No  | No  |
| Lane Alignment             | Left  | Left  | Right   | Left  | Left  | Right   | Left   | Left  | Right   | Left  | Left  | Right   |
| Median Width(ft)           |   | 24  |   |   | 24  |   |  | 12  |   |   | 12  |   |
| Link Offset(ft)            |   | 0   |   |   | 0   |   |  | 0   |   |   | 0   |   |
| Crosswalk Width(ft)        |   | 16  |   |   | 16  |   |  | 16  |   |   | 16  |   |
| Two way Left Turn Lane     |   |   |   |   |   |   |  |   |   |   |   |   |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07   | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15  |   | 9   | 15  |   | 9   | 15   |   | 9   | 15  |   | 9   |
| Number of Detectors        | 1   | 2   |   | 1   | 2   | 1   | 1  | 2   | 1   | 1   | 2   | 1   |
| Detector Template          | Left  | Thru  |   | Left  | Thru  | Right   | Left   | Thru  | Right   | Left  | Thru  | Right   |
| Leading Detector (ft)      | 20  | 100   |   | 20  | 100   | 20  | 20   | 100   | 20  | 20  | 100   | 20  |
| Trailing Detector (ft)     | 0   | 0   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Detector 1 Position(ft)    | 0   | 0   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Detector 1 Size(ft)        | 20  | 6   |   | 20  | 6   | 20  | 20   | 6   | 20  | 20  | 6   | 20  |
| Detector 1 Type            | Cl+Ex   | Cl+Ex   |   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex  | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   |
| Detector 1 Channel         |   |   |   |   |   |   |  |   |   |   |   |   |
| Detector 1 Extend (s)      | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |   | 94  |   |   | 94  |   |  | 94  |   |   | 94  |   |
| Detector 2 Size(ft)        |   | 6   |   |   | 6   |   |  | 6   |   |   | 6   |   |
| Detector 2 Type            |   | Cl+Ex   |   |   | Cl+Ex   |   |  | Cl+Ex   |   |   | Cl+Ex   |   |
| Detector 2 Channel         |   |   |   |   |   |   |  |   |   |   |   |   |
| Detector 2 Extend (s)      |   | 0.0   |   |   | 0.0   |   |  | 0.0   |   |   | 0.0   |   |
| Turn Type                  | Prot  | NA  |   | Prot  | NA  | Perm  | Split  | NA  | Prot  | Split   | NA  | pm+ov   |
| Protected Phases           | 7   | 4   |   | 3   | 8   |   | 2  | 2   | 2   | 6   | 6   | 7   |
| Permitted Phases           |   |   |   |   |   | 8   |  |   |   |   |   | 6   |



Lanes, Volumes, Timings  
12: N Associated Road & Birch Street

AM Existing  
AM Existing



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR   | NBL  | NBT  | NBR  | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-------|------|------|------|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     | 8     | 2    | 2    | 2    | 6     | 6     | 7     |
| Switch Phase            |       |       |     |      |       |       |      |      |      |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   | 6.0  | 6.0  | 6.0  | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 30.0  |     | 10.0 | 33.0  | 33.0  | 11.0 | 11.0 | 11.0 | 35.0  | 35.0  | 10.0  |
| Total Split (s)         | 35.0  | 64.0  |     | 10.0 | 39.0  | 39.0  | 11.0 | 11.0 | 11.0 | 35.0  | 35.0  | 35.0  |
| Total Split (%)         | 29.2% | 53.3% |     | 8.3% | 32.5% | 32.5% | 9.2% | 9.2% | 9.2% | 29.2% | 29.2% | 29.2% |
| Maximum Green (s)       | 31.0  | 59.0  |     | 6.0  | 34.0  | 34.0  | 6.0  | 6.0  | 6.0  | 30.0  | 30.0  | 31.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   | 4.0  | 4.0  | 4.0  | 4.0   | 4.0   | 3.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   | 1.0  | 1.0  | 1.0  | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   | 5.0  | 5.0  | 5.0  | 5.0   | 5.0   | 4.0   |
| Lead/Lag                | Lead  | Lead  |     | Lag  | Lag   | Lag   |      |      |      |       |       | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   | Yes   |      |      |      |       |       | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   | 3.0  | 3.0  | 3.0  | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max | C-Max | Max  | Max  | Max  | Max   | Max   | None  |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   | 7.0   |      |      |      | 7.0   | 7.0   |       |
| Flash Dont Walk (s)     |       | 18.0  |     |      | 21.0  | 21.0  |      |      |      | 23.0  | 23.0  |       |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     | 2     |      |      |      | 2     | 2     |       |
| Act Effct Green (s)     | 28.5  | 67.0  |     | 6.0  | 36.5  | 36.5  | 6.0  | 6.0  | 6.0  | 30.0  | 30.0  | 63.5  |
| Actuated g/C Ratio      | 0.24  | 0.56  |     | 0.05 | 0.30  | 0.30  | 0.05 | 0.05 | 0.05 | 0.25  | 0.25  | 0.53  |
| v/c Ratio               | 0.87  | 0.50  |     | 0.11 | 0.77  | 0.17  | 0.06 | 0.06 | 0.04 | 0.23  | 0.23  | 0.58  |
| Control Delay           | 41.8  | 10.8  |     | 40.8 | 27.3  | 1.8   | 56.0 | 55.7 | 0.4  | 34.6  | 34.7  | 13.2  |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Delay             | 41.8  | 10.8  |     | 40.8 | 27.3  | 1.8   | 56.0 | 55.7 | 0.4  | 34.6  | 34.7  | 13.2  |
| LOS                     | D     | B     |     | D    | C     | A     | E    | E    | A    | C     | C     | B     |
| Approach Delay          |       | 19.2  |     |      | 24.9  |       |      | 29.6 |      |       | 18.8  |       |
| Approach LOS            |       | B     |     |      | C     |       |      | C    |      |       | B     |       |
| Queue Length 50th (ft)  | 231   | 221   |     | 0    | 323   | 0     | 4    | 4    | 0    | 53    | 53    | 125   |
| Queue Length 95th (ft)  | m244  | m222  |     | m15  | 387   | m6    | 11   | 11   | 0    | m86   | m85   | 156   |
| Internal Link Dist (ft) |       | 1628  |     |      | 1886  |       |      | 337  |      |       | 1295  |       |
| Turn Bay Length (ft)    | 195   |       |     | 200  |       | 200   | 120  |      | 65   | 205   |       |       |
| Base Capacity (vph)     | 432   | 1867  |     | 83   | 1021  | 526   | 83   | 88   | 212  | 398   | 399   | 908   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.80  | 0.50  |     | 0.11 | 0.77  | 0.17  | 0.06 | 0.06 | 0.04 | 0.23  | 0.23  | 0.57  |

Intersection Summary

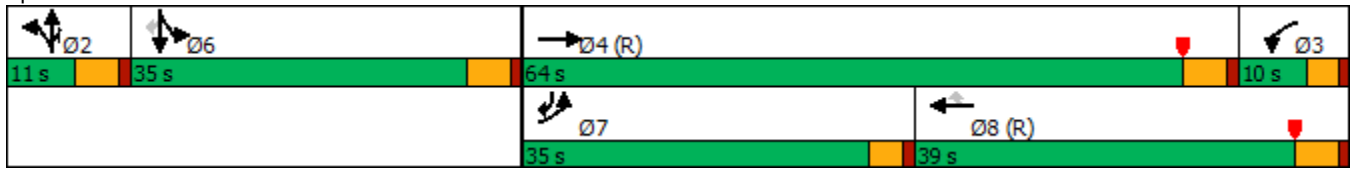
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 78 (65%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 20.9  
 Intersection Capacity Utilization 65.5%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service C

m Volume for 95th percentile queue is metered by upstream signal.

Lanes, Volumes, Timings  
 12: N Associated Road & Birch Street

AM Existing  
 AM Existing

Splits and Phases: 12: N Associated Road & Birch Street



Lanes, Volumes, Timings  
32: Voyager Ave/Olinda & Birch Street

AM Existing  
AM Existing



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 95    | 575   | 74    | 31    | 459   | 127   | 27    | 23    | 16    | 75    | 2     | 93    |
| Future Volume (vph)        | 95    | 575   | 74    | 31    | 459   | 127   | 27    | 23    | 16    | 75    | 2     | 93    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 200   |       | 0     | 140   |       | 225   | 120   |       | 0     | 0     |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     | 0     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.95  | 0.95  | 1.00  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.983 |       |       |       | 0.850 |       | 0.938 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |       | 0.954 |       |
| Satd. Flow (prot)          | 1676  | 3296  | 0     | 1676  | 3353  | 1500  | 1676  | 1655  | 0     | 0     | 1684  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.585 |       |       |       | 0.682 |       |
| Satd. Flow (perm)          | 1676  | 3296  | 0     | 1676  | 3353  | 1500  | 1032  | 1655  | 0     | 0     | 1204  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 16    |       |       |       | 172   |       | 28    |       |       |       | 221   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3055  |       |       | 1784  |       |       | 760   |       |       |       | 496   |
| Travel Time (s)            |       | 69.4  |       |       | 40.5  |       |       | 17.3  |       |       |       | 11.3  |
| Peak Hour Factor           | 0.76  | 0.76  | 0.76  | 0.74  | 0.74  | 0.74  | 0.57  | 0.57  | 0.57  | 0.42  | 0.42  | 0.42  |
| Adj. Flow (vph)            | 125   | 757   | 97    | 42    | 620   | 172   | 47    | 40    | 28    | 179   | 5     | 221   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 125   | 854   | 0     | 42    | 620   | 172   | 47    | 68    | 0     | 0     | 184   | 221   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 12    |       |       |       | 12    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Perm  | NA    |       | Perm  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       |       | 2     |       |       |       | 6     |
| Permitted Phases           |       |       |       |       |       | 8     | 2     |       |       | 6     |       | 6     |

Lanes, Volumes, Timings  
32: Voyager Ave/Olinda & Birch Street

AM Existing  
AM Existing

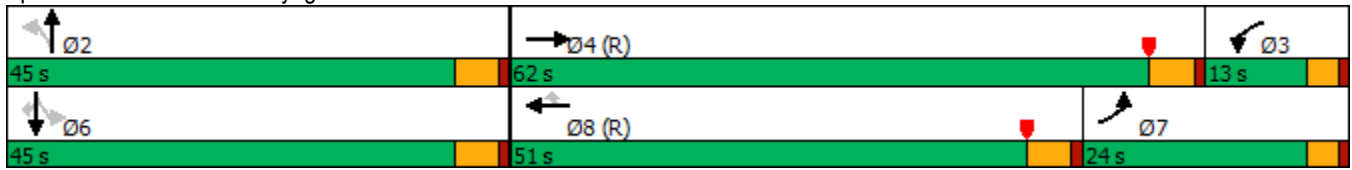


| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     | 8     | 2     | 2     |     | 6     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |       |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 30.0  |     | 10.0  | 32.0  | 32.0  | 40.0  | 40.0  |     | 37.0  | 37.0  | 37.0  |
| Total Split (s)         | 24.0  | 62.0  |     | 13.0  | 51.0  | 51.0  | 45.0  | 45.0  |     | 45.0  | 45.0  | 45.0  |
| Total Split (%)         | 20.0% | 51.7% |     | 10.8% | 42.5% | 42.5% | 37.5% | 37.5% |     | 37.5% | 37.5% | 37.5% |
| Maximum Green (s)       | 20.0  | 57.0  |     | 9.0   | 46.0  | 46.0  | 40.0  | 40.0  |     | 40.0  | 40.0  | 40.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   |     | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   | 5.0   | 5.0   |     | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lead  |     | Lag   | Lead  | Lead  |       |       |     |       |       |       |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   | Yes   |       |       |     |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max | C-Max | Max   | Max   |     | Max   | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 18.0  |     |       | 20.0  | 20.0  | 28.0  | 28.0  |     | 25.0  | 25.0  | 25.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     | 2     | 2     | 2     |     | 2     | 2     | 2     |
| Act Effct Green (s)     | 17.2  | 57.3  |     | 7.9   | 46.0  | 46.0  | 42.8  | 42.8  |     | 42.8  | 42.8  | 42.8  |
| Actuated g/C Ratio      | 0.14  | 0.48  |     | 0.07  | 0.38  | 0.38  | 0.36  | 0.36  |     | 0.36  | 0.36  | 0.36  |
| v/c Ratio               | 0.52  | 0.54  |     | 0.38  | 0.48  | 0.25  | 0.13  | 0.11  |     | 0.43  | 0.33  | 0.33  |
| Control Delay           | 45.2  | 5.6   |     | 62.4  | 26.8  | 4.8   | 29.1  | 18.2  |     | 34.4  | 5.1   | 5.1   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 45.2  | 5.6   |     | 62.4  | 26.8  | 4.8   | 29.1  | 18.2  |     | 34.4  | 5.1   | 5.1   |
| LOS                     | D     | A     |     | E     | C     | A     | C     | B     |     | C     | A     | A     |
| Approach Delay          |       | 10.6  |     |       | 24.1  |       |       | 22.6  |     |       | 18.4  |       |
| Approach LOS            |       | B     |     |       | C     |       |       | C     |     |       | B     |       |
| Queue Length 50th (ft)  | 103   | 49    |     | 32    | 198   | 35    | 25    | 21    |     | 111   | 0     | 0     |
| Queue Length 95th (ft)  | m139  | 20    |     | m49   | 203   | m50   | 34    | 28    |     | 74    | 0     | 0     |
| Internal Link Dist (ft) |       | 2975  |     |       | 1704  |       |       | 680   |     |       | 416   |       |
| Turn Bay Length (ft)    | 200   |       |     | 140   |       | 225   | 120   |       |     |       |       |       |
| Base Capacity (vph)     | 279   | 1583  |     | 125   | 1285  | 681   | 368   | 607   |     | 429   | 676   |       |
| Starvation Cap Reductn  | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.45  | 0.54  |     | 0.34  | 0.48  | 0.25  | 0.13  | 0.11  |     | 0.43  | 0.33  | 0.33  |

Intersection Summary
























|   |   |
|---|---|
| Area Type:  | Other   |
| Cycle Length:   | 120   |
| Actuated Cycle Length:  | 120   |
| Offset:   | 101 (84%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:  | 85  |
| Control Type:   | Actuated-Coordinated  |
| Maximum v/c Ratio:  | 0.54  |
| Intersection Signal Delay:  | 17.4  |
| Intersection LOS:   | B   |
| Intersection Capacity Utilization:                                | 47.1%   |
| ICU Level of Service:   | A   |
| Analysis Period (min):  | 15  |
| m Volume for 95th percentile queue is metered by upstream signal. |   |

Splits and Phases: 32: Voyager Ave/Olinda & Birch Street



Lanes, Volumes, Timings  
12: N Associated Road & Birch Street

PM Existing  
PM Existing

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations        |  |  |   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)       | 265   | 864   | 11  | 5   | 1213  | 127   | 12  | 2   | 10  | 96  | 3   | 275   |
| Future Volume (vph)        | 265   | 864   | 11  | 5   | 1213  | 127   | 12  | 2   | 10  | 96  | 3   | 275   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 195   |   | 0   | 200   |   | 200   | 120   |   | 65  | 205   |   | 0   |
| Storage Lanes              | 1   |   | 0   | 1   |   | 1   | 1   |   | 1   | 1   |   | 1   |
| Taper Length (ft)          | 90  |   |   | 90  |   |   | 90  |   |   | 90  |   |   |
| Lane Util. Factor          | 1.00  | 0.95  | 0.95  | 1.00  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  | 0.95  | 0.95  | 1.00  |
| Frt                        |   | 0.998   |   |   |   | 0.850   |   |   | 0.850   |   |   | 0.850   |
| Flt Protected              | 0.950   |   |   | 0.950   |   |   | 0.950   |   |   | 0.950   | 0.955   |   |
| Satd. Flow (prot)          | 1676  | 3346  | 0   | 1676  | 3353  | 1500  | 1676  | 1765  | 1500  | 1593  | 1601  | 1500  |
| Flt Permitted              | 0.950   |   |   | 0.950   |   |   | 0.950   |   |   | 0.950   | 0.955   |   |
| Satd. Flow (perm)          | 1676  | 3346  | 0   | 1676  | 3353  | 1500  | 1676  | 1765  | 1500  | 1593  | 1601  | 1500  |
| Right Turn on Red          |   |   | Yes   |   |   | Yes   |   |   | Yes   |   |   | Yes   |
| Satd. Flow (RTOR)          |   | 1   |   |   |   | 100   |   |   | 145   |   |   | 109   |
| Link Speed (mph)           |   | 30  |   |   | 30  |   |   | 30  |   |   | 30  |   |
| Link Distance (ft)         |   | 1708  |   |   | 1966  |   |   | 417   |   |   | 1375  |   |
| Travel Time (s)            |   | 38.8  |   |   | 44.7  |   |   | 9.5   |   |   | 31.3  |   |
| Peak Hour Factor           | 0.93  | 0.93  | 0.93  | 0.90  | 0.90  | 0.90  | 0.75  | 0.75  | 0.75  | 0.81  | 0.81  | 0.81  |
| Adj. Flow (vph)            | 285   | 929   | 12  | 6   | 1348  | 141   | 16  | 3   | 13  | 119   | 4   | 340   |
| Shared Lane Traffic (%)    |   |   |   |   |   |   |   |   |   | 48%   |   |   |
| Lane Group Flow (vph)      | 285   | 941   | 0   | 6   | 1348  | 141   | 16  | 3   | 13  | 62  | 61  | 340   |
| Enter Blocked Intersection | No  | No  | No  | No  | No  | No  | No  | No  | No  | No  | No  | No  |
| Lane Alignment             | Left  | Left  | Right   | Left  | Left  | Right   | Left  | Left  | Right   | Left  | Left  | Right   |
| Median Width(ft)           |   | 24  |   |   | 24  |   |   | 12  |   |   | 12  |   |
| Link Offset(ft)            |   | 0   |   |   | 0   |   |   | 0   |   |   | 0   |   |
| Crosswalk Width(ft)        |   | 16  |   |   | 16  |   |   | 16  |   |   | 16  |   |
| Two way Left Turn Lane     |   |   |   |   |   |   |   |   |   |   |   |   |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15  |   | 9   | 15  |   | 9   | 15  |   | 9   | 15  |   | 9   |
| Number of Detectors        | 1   | 2   |   | 1   | 2   | 1   | 1   | 2   | 1   | 1   | 2   | 1   |
| Detector Template          | Left  | Thru  |   | Left  | Thru  | Right   | Left  | Thru  | Right   | Left  | Thru  | Right   |
| Leading Detector (ft)      | 20  | 100   |   | 20  | 100   | 20  | 20  | 100   | 20  | 20  | 100   | 20  |
| Trailing Detector (ft)     | 0   | 0   |   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Detector 1 Position(ft)    | 0   | 0   |   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Detector 1 Size(ft)        | 20  | 6   |   | 20  | 6   | 20  | 20  | 6   | 20  | 20  | 6   | 20  |
| Detector 1 Type            | Cl+Ex   | Cl+Ex   |   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   |
| Detector 1 Channel         |   |   |   |   |   |   |   |   |   |   |   |   |
| Detector 1 Extend (s)      | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |   | 94  |   |   | 94  |   |   | 94  |   |   | 94  |   |
| Detector 2 Size(ft)        |   | 6   |   |   | 6   |   |   | 6   |   |   | 6   |   |
| Detector 2 Type            |   | Cl+Ex   |   |   | Cl+Ex   |   |   | Cl+Ex   |   |   | Cl+Ex   |   |
| Detector 2 Channel         |   |   |   |   |   |   |   |   |   |   |   |   |
| Detector 2 Extend (s)      |   | 0.0   |   |   | 0.0   |   |   | 0.0   |   |   | 0.0   |   |
| Turn Type                  | Prot  | NA  |   | Prot  | NA  | Perm  | Split   | NA  | Prot  | Split   | NA  | pm+ov   |
| Protected Phases           | 7   | 4   |   | 3   | 8   |   | 2   | 2   | 2   | 6   | 6   | 7   |
| Permitted Phases           |   |   |   |   |   | 8   |   |   |   |   |   | 6   |

Lanes, Volumes, Timings  
12: N Associated Road & Birch Street

PM Existing  
PM Existing



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR   | NBL  | NBT  | NBR  | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-------|------|------|------|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     | 8     | 2    | 2    | 2    | 6     | 6     | 7     |
| Switch Phase            |       |       |     |      |       |       |      |      |      |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   | 6.0  | 6.0  | 6.0  | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 30.0  |     | 10.0 | 33.0  | 33.0  | 11.0 | 11.0 | 11.0 | 35.0  | 35.0  | 10.0  |
| Total Split (s)         | 23.0  | 64.0  |     | 10.0 | 51.0  | 51.0  | 11.0 | 11.0 | 11.0 | 35.0  | 35.0  | 23.0  |
| Total Split (%)         | 19.2% | 53.3% |     | 8.3% | 42.5% | 42.5% | 9.2% | 9.2% | 9.2% | 29.2% | 29.2% | 19.2% |
| Maximum Green (s)       | 19.0  | 59.0  |     | 6.0  | 46.0  | 46.0  | 6.0  | 6.0  | 6.0  | 30.0  | 30.0  | 19.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   | 4.0  | 4.0  | 4.0  | 4.0   | 4.0   | 3.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   | 1.0  | 1.0  | 1.0  | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   | 5.0  | 5.0  | 5.0  | 5.0   | 5.0   | 4.0   |
| Lead/Lag                | Lead  | Lead  |     | Lag  | Lag   | Lag   |      |      |      |       |       | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   | Yes   |      |      |      |       |       | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   | 3.0  | 3.0  | 3.0  | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max | C-Max | Max  | Max  | Max  | Max   | Max   | None  |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   | 7.0   |      |      |      | 7.0   | 7.0   |       |
| Flash Dont Walk (s)     |       | 18.0  |     |      | 21.0  | 21.0  |      |      |      | 23.0  | 23.0  |       |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     | 2     |      |      |      | 2     | 2     |       |
| Act Effct Green (s)     | 19.0  | 67.0  |     | 6.0  | 46.0  | 46.0  | 6.0  | 6.0  | 6.0  | 30.0  | 30.0  | 54.0  |
| Actuated g/C Ratio      | 0.16  | 0.56  |     | 0.05 | 0.38  | 0.38  | 0.05 | 0.05 | 0.05 | 0.25  | 0.25  | 0.45  |
| v/c Ratio               | 1.08  | 0.50  |     | 0.07 | 1.05  | 0.22  | 0.19 | 0.03 | 0.06 | 0.16  | 0.15  | 0.46  |
| Control Delay           | 99.4  | 15.8  |     | 34.4 | 47.7  | 2.3   | 60.3 | 55.0 | 0.6  | 32.5  | 32.3  | 18.8  |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Delay             | 99.4  | 15.8  |     | 34.4 | 47.7  | 2.3   | 60.3 | 55.0 | 0.6  | 32.5  | 32.3  | 18.8  |
| LOS                     | F     | B     |     | C    | D     | A     | E    | D    | A    | C     | C     | B     |
| Approach Delay          |       | 35.2  |     |      | 43.3  |       |      | 35.6 |      |       | 22.4  |       |
| Approach LOS            |       | D     |     |      | D     |       |      | D    |      |       | C     |       |
| Queue Length 50th (ft)  | ~246  | 308   |     | 5    | ~615  | 17    | 12   | 2    | 0    | 37    | 36    | 132   |
| Queue Length 95th (ft)  | m#299 | m330  |     | m5   | m#621 | m20   | 30   | 11   | 0    | 67    | 65    | 142   |
| Internal Link Dist (ft) |       | 1628  |     |      | 1886  |       |      | 337  |      |       | 1295  |       |
| Turn Bay Length (ft)    | 195   |       |     | 200  |       | 200   | 120  |      | 65   | 205   |       |       |
| Base Capacity (vph)     | 265   | 1868  |     | 83   | 1285  | 636   | 83   | 88   | 212  | 398   | 400   | 734   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.08  | 0.50  |     | 0.07 | 1.05  | 0.22  | 0.19 | 0.03 | 0.06 | 0.16  | 0.15  | 0.46  |

Intersection Summary

|                                    |  |
|------------------------------------|--|
| Area Type:                         | Other  |
| Cycle Length:                      | 120  |
| Actuated Cycle Length:             | 120  |
| Offset:                            | 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:                     | 120  |
| Control Type:                      | Actuated-Coordinated   |
| Maximum v/c Ratio:                 | 1.08   |
| Intersection Signal Delay:         | 37.2   |
| Intersection LOS:                  | D  |
| Intersection Capacity Utilization: | 72.1%  |
| ICU Level of Service:              | C  |
| Analysis Period (min):             | 15   |

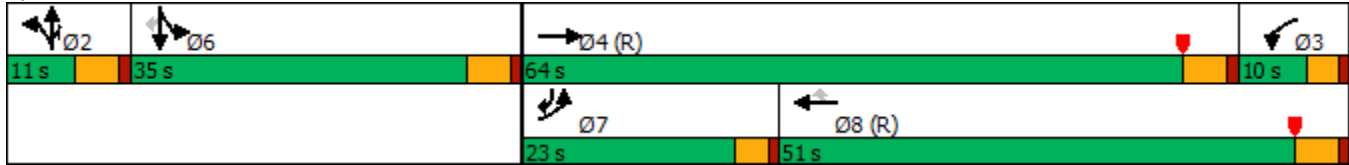
~ Volume exceeds capacity, queue is theoretically infinite.

Lanes, Volumes, Timings  
 12: N Associated Road & Birch Street

PM Existing  
 PM Existing

- Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
- Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: N Associated Road & Birch Street





Lanes, Volumes, Timings  
32: Voyager Ave/Olinda & Birch Street

PM Existing  
PM Existing



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 26    | 848   | 10    | 2     | 641   | 11    | 47    | 1     | 39    | 11    | 0     | 18    |
| Future Volume (vph)        | 26    | 848   | 10    | 2     | 641   | 11    | 47    | 1     | 39    | 11    | 0     | 18    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 200   |       | 0     | 140   |       | 225   | 120   |       | 0     | 0     |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     | 0     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.95  | 0.95  | 1.00  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.998 |       |       |       | 0.850 |       | 0.853 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |       | 0.950 |       |
| Satd. Flow (prot)          | 1676  | 3346  | 0     | 1676  | 3353  | 1500  | 1676  | 1505  | 0     | 0     | 1676  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.747 |       |       |       | 0.722 |       |
| Satd. Flow (perm)          | 1676  | 3346  | 0     | 1676  | 3353  | 1500  | 1318  | 1505  | 0     | 0     | 1274  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 1     |       |       |       | 64    |       | 53    |       |       |       | 100   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3055  |       |       | 1784  |       |       | 760   |       |       |       | 496   |
| Travel Time (s)            |       | 69.4  |       |       | 40.5  |       |       | 17.3  |       |       |       | 11.3  |
| Peak Hour Factor           | 0.90  | 0.90  | 0.90  | 0.83  | 0.83  | 0.83  | 0.73  | 0.73  | 0.73  | 0.70  | 0.70  | 0.70  |
| Adj. Flow (vph)            | 29    | 942   | 11    | 2     | 772   | 13    | 64    | 1     | 53    | 16    | 0     | 26    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 29    | 953   | 0     | 2     | 772   | 13    | 64    | 54    | 0     | 0     | 16    | 26    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 12    |       |       |       | 12    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Perm  | NA    |       | Perm  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       |       | 2     |       |       |       | 6     |
| Permitted Phases           |       |       |       |       |       | 8     | 2     |       |       | 6     |       | 6     |

Lanes, Volumes, Timings  
32: Voyager Ave/Olinda & Birch Street

PM Existing  
PM Existing



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR   | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-------|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     | 8     | 2     | 2     |     | 6     | 6     | 6     |
| Switch Phase            |       |       |     |      |       |       |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 30.0  |     | 10.0 | 32.0  | 32.0  | 40.0  | 40.0  |     | 37.0  | 37.0  | 37.0  |
| Total Split (s)         | 12.0  | 67.0  |     | 11.0 | 66.0  | 66.0  | 42.0  | 42.0  |     | 42.0  | 42.0  | 42.0  |
| Total Split (%)         | 10.0% | 55.8% |     | 9.2% | 55.0% | 55.0% | 35.0% | 35.0% |     | 35.0% | 35.0% | 35.0% |
| Maximum Green (s)       | 8.0   | 62.0  |     | 7.0  | 61.0  | 61.0  | 37.0  | 37.0  |     | 37.0  | 37.0  | 37.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   | 4.0   | 4.0   |     | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   | 5.0   | 5.0   |     | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead | Lead  | Lead  |       |       |     |       |       |       |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   | Yes   |       |       |     |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max | C-Max | Max   | Max   |     | Max   | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 18.0  |     |      | 20.0  | 20.0  | 28.0  | 28.0  |     | 25.0  | 25.0  | 25.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     | 2     | 2     | 2     |     | 2     | 2     | 2     |
| Act Effct Green (s)     | 7.3   | 70.9  |     | 6.1  | 65.8  | 65.8  | 37.0  | 37.0  |     |       | 37.0  | 37.0  |
| Actuated g/C Ratio      | 0.06  | 0.59  |     | 0.05 | 0.55  | 0.55  | 0.31  | 0.31  |     |       | 0.31  | 0.31  |
| v/c Ratio               | 0.29  | 0.48  |     | 0.02 | 0.42  | 0.02  | 0.16  | 0.11  |     |       | 0.04  | 0.05  |
| Control Delay           | 46.7  | 4.3   |     | 43.5 | 16.3  | 2.3   | 31.6  | 8.8   |     |       | 29.6  | 0.2   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     |       | 0.0   | 0.0   |
| Total Delay             | 46.7  | 4.3   |     | 43.5 | 16.3  | 2.3   | 31.6  | 8.8   |     |       | 29.6  | 0.2   |
| LOS                     | D     | A     |     | D    | B     | A     | C     | A     |     |       | C     | A     |
| Approach Delay          |       | 5.5   |     |      | 16.1  |       |       | 21.1  |     |       | 11.4  |       |
| Approach LOS            |       | A     |     |      | B     |       |       | C     |     |       | B     |       |
| Queue Length 50th (ft)  | 24    | 46    |     | 1    | 222   | 0     | 36    | 1     |     |       | 9     | 0     |
| Queue Length 95th (ft)  | m35   | 131   |     | m3   | 244   | m2    | 57    | 19    |     |       | 20    | 0     |
| Internal Link Dist (ft) |       | 2975  |     |      | 1704  |       |       | 680   |     |       | 416   |       |
| Turn Bay Length (ft)    | 200   |       |     | 140  |       | 225   | 120   |       |     |       |       |       |
| Base Capacity (vph)     | 111   | 1978  |     | 97   | 1838  | 851   | 406   | 500   |     |       | 392   | 531   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     | 0     | 0     | 0     |     |       | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     | 0     | 0     | 0     |     |       | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     | 0     | 0     | 0     |     |       | 0     | 0     |
| Reduced v/c Ratio       | 0.26  | 0.48  |     | 0.02 | 0.42  | 0.02  | 0.16  | 0.11  |     |       | 0.04  | 0.05  |

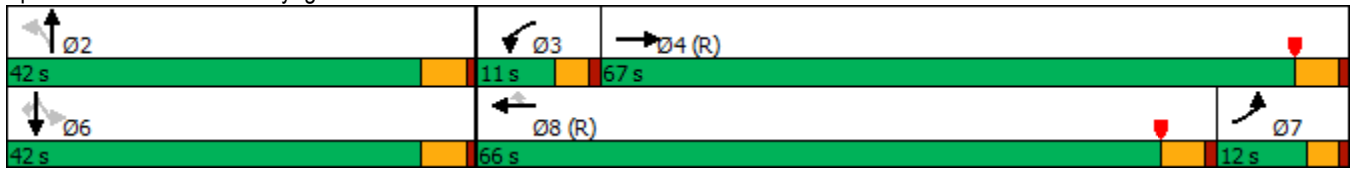
Intersection Summary

|   |   |
|---|---|
| Area Type:  | Other   |
| Cycle Length:   | 120   |
| Actuated Cycle Length:  | 120   |
| Offset:   | 114 (95%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:  | 85  |
| Control Type:   | Actuated-Coordinated  |
| Maximum v/c Ratio:  | 0.48  |
| Intersection Signal Delay:  | 10.9  |
| Intersection LOS:   | B   |
| Intersection Capacity Utilization:                                | 42.8%   |
| ICU Level of Service:   | A   |
| Analysis Period (min):  | 15  |
| m Volume for 95th percentile queue is metered by upstream signal. |   |

Lanes, Volumes, Timings  
 32: Voyager Ave/Olinda & Birch Street

PM Existing  
 PM Existing

Splits and Phases: 32: Voyager Ave/Olinda & Birch Street


























*APPENDIX K-VI*

**EXISTING PLUS PROJECT TRAFFIC CONDITIONS –  
SYNCHRO QUEUEING**

Lanes, Volumes, Timings  
12: N Associated Road & Birch Street

AM Existing Plus Project  
AM Existing Plus Project

|                            |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations        |  |  |   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)       | 309   | 827   | 16  | 8   | 740   | 78  | 3  | 3   | 5   | 152   | 2   | 437   |
| Future Volume (vph)        | 309   | 827   | 16  | 8   | 740   | 78  | 3  | 3   | 5   | 152   | 2   | 437   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800   | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 195   |   | 0   | 200   |   | 200   | 120  |   | 65  | 205   |   | 0   |
| Storage Lanes              | 1   |   | 0   | 1   |   | 1   | 1  |   | 1   | 1   |   | 1   |
| Taper Length (ft)          | 90  |   |   | 90  |   |   | 90   |   |   | 90  |   |   |
| Lane Util. Factor          | 1.00  | 0.95  | 0.95  | 1.00  | 0.95  | 1.00  | 1.00   | 1.00  | 1.00  | 0.95  | 0.95  | 1.00  |
| Frt                        |   | 0.997   |   |   |   | 0.850   |  |   | 0.850   |   |   | 0.850   |
| Flt Protected              | 0.950   |   |   | 0.950   |   |   | 0.950  |   |   | 0.950   | 0.953   |   |
| Satd. Flow (prot)          | 1676  | 3343  | 0   | 1676  | 3353  | 1500  | 1676   | 1765  | 1500  | 1593  | 1598  | 1500  |
| Flt Permitted              | 0.950   |   |   | 0.950   |   |   | 0.950  |   |   | 0.950   | 0.953   |   |
| Satd. Flow (perm)          | 1676  | 3343  | 0   | 1676  | 3353  | 1500  | 1676   | 1765  | 1500  | 1593  | 1598  | 1500  |
| Right Turn on Red          |   |   | Yes   |   |   | Yes   |  |   | Yes   |   |   | Yes   |
| Satd. Flow (RTOR)          |   | 2   |   |   |   | 100   |  |   | 145   |   |   | 180   |
| Link Speed (mph)           |   | 30  |   |   | 30  |   |  | 30  |   |   | 30  |   |
| Link Distance (ft)         |   | 1708  |   |   | 1966  |   |  | 417   |   |   | 1375  |   |
| Travel Time (s)            |   | 38.8  |   |   | 44.7  |   |  | 9.5   |   |   | 31.3  |   |
| Peak Hour Factor           | 0.89  | 0.89  | 0.89  | 0.88  | 0.88  | 0.88  | 0.55   | 0.55  | 0.55  | 0.85  | 0.85  | 0.85  |
| Adj. Flow (vph)            | 347   | 929   | 18  | 9   | 841   | 89  | 5  | 5   | 9   | 179   | 2   | 514   |
| Shared Lane Traffic (%)    |   |   |   |   |   |   |  |   |   | 49%   |   |   |
| Lane Group Flow (vph)      | 347   | 947   | 0   | 9   | 841   | 89  | 5  | 5   | 9   | 91  | 90  | 514   |
| Enter Blocked Intersection | No  | No  | No  | No  | No  | No  | No   | No  | No  | No  | No  | No  |
| Lane Alignment             | Left  | Left  | Right   | Left  | Left  | Right   | Left   | Left  | Right   | Left  | Left  | Right   |
| Median Width(ft)           |   | 24  |   |   | 24  |   |  | 12  |   |   | 12  |   |
| Link Offset(ft)            |   | 0   |   |   | 0   |   |  | 0   |   |   | 0   |   |
| Crosswalk Width(ft)        |   | 16  |   |   | 16  |   |  | 16  |   |   | 16  |   |
| Two way Left Turn Lane     |   |   |   |   |   |   |  |   |   |   |   |   |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07   | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15  |   | 9   | 15  |   | 9   | 15   |   | 9   | 15  |   | 9   |
| Number of Detectors        | 1   | 2   |   | 1   | 2   | 1   | 1  | 2   | 1   | 1   | 2   | 1   |
| Detector Template          | Left  | Thru  |   | Left  | Thru  | Right   | Left   | Thru  | Right   | Left  | Thru  | Right   |
| Leading Detector (ft)      | 20  | 100   |   | 20  | 100   | 20  | 20   | 100   | 20  | 20  | 100   | 20  |
| Trailing Detector (ft)     | 0   | 0   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Detector 1 Position(ft)    | 0   | 0   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Detector 1 Size(ft)        | 20  | 6   |   | 20  | 6   | 20  | 20   | 6   | 20  | 20  | 6   | 20  |
| Detector 1 Type            | Cl+Ex   | Cl+Ex   |   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex  | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   |
| Detector 1 Channel         |   |   |   |   |   |   |  |   |   |   |   |   |
| Detector 1 Extend (s)      | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |   | 94  |   |   | 94  |   |  | 94  |   |   | 94  |   |
| Detector 2 Size(ft)        |   | 6   |   |   | 6   |   |  | 6   |   |   | 6   |   |
| Detector 2 Type            |   | Cl+Ex   |   |   | Cl+Ex   |   |  | Cl+Ex   |   |   | Cl+Ex   |   |
| Detector 2 Channel         |   |   |   |   |   |   |  |   |   |   |   |   |
| Detector 2 Extend (s)      |   | 0.0   |   |   | 0.0   |   |  | 0.0   |   |   | 0.0   |   |
| Turn Type                  | Prot  | NA  |   | Prot  | NA  | Perm  | Split  | NA  | Prot  | Split   | NA  | pm+ov   |
| Protected Phases           | 7   | 4   |   | 3   | 8   |   | 2  | 2   | 2   | 6   | 6   | 7   |
| Permitted Phases           |   |   |   |   |   | 8   |  |   |   |   |   | 6   |

Lanes, Volumes, Timings  
12: N Associated Road & Birch Street

AM Existing Plus Project  
AM Existing Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR   | NBL  | NBT  | NBR  | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-------|------|------|------|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     | 8     | 2    | 2    | 2    | 6     | 6     | 7     |
| Switch Phase            |       |       |     |      |       |       |      |      |      |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   | 6.0  | 6.0  | 6.0  | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 30.0  |     | 10.0 | 33.0  | 33.0  | 11.0 | 11.0 | 11.0 | 35.0  | 35.0  | 10.0  |
| Total Split (s)         | 35.0  | 64.0  |     | 10.0 | 39.0  | 39.0  | 11.0 | 11.0 | 11.0 | 35.0  | 35.0  | 35.0  |
| Total Split (%)         | 29.2% | 53.3% |     | 8.3% | 32.5% | 32.5% | 9.2% | 9.2% | 9.2% | 29.2% | 29.2% | 29.2% |
| Maximum Green (s)       | 31.0  | 59.0  |     | 6.0  | 34.0  | 34.0  | 6.0  | 6.0  | 6.0  | 30.0  | 30.0  | 31.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   | 4.0  | 4.0  | 4.0  | 4.0   | 4.0   | 3.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   | 1.0  | 1.0  | 1.0  | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   | 5.0  | 5.0  | 5.0  | 5.0   | 5.0   | 4.0   |
| Lead/Lag                | Lead  | Lead  |     | Lag  | Lag   | Lag   |      |      |      |       |       | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   | Yes   |      |      |      |       |       | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   | 3.0  | 3.0  | 3.0  | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max | C-Max | Max  | Max  | Max  | Max   | Max   | None  |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   | 7.0   |      |      |      | 7.0   | 7.0   |       |
| Flash Dont Walk (s)     |       | 18.0  |     |      | 21.0  | 21.0  |      |      |      | 23.0  | 23.0  |       |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     | 2     |      |      |      | 2     | 2     |       |
| Act Effct Green (s)     | 28.5  | 67.0  |     | 6.0  | 36.5  | 36.5  | 6.0  | 6.0  | 6.0  | 30.0  | 30.0  | 63.5  |
| Actuated g/C Ratio      | 0.24  | 0.56  |     | 0.05 | 0.30  | 0.30  | 0.05 | 0.05 | 0.05 | 0.25  | 0.25  | 0.53  |
| v/c Ratio               | 0.87  | 0.51  |     | 0.11 | 0.82  | 0.17  | 0.06 | 0.06 | 0.04 | 0.23  | 0.23  | 0.59  |
| Control Delay           | 41.6  | 11.0  |     | 39.8 | 29.4  | 1.7   | 56.0 | 55.7 | 0.4  | 34.6  | 34.7  | 13.4  |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Delay             | 41.6  | 11.0  |     | 39.8 | 29.4  | 1.7   | 56.0 | 55.7 | 0.4  | 34.6  | 34.7  | 13.4  |
| LOS                     | D     | B     |     | D    | C     | A     | E    | E    | A    | C     | C     | B     |
| Approach Delay          |       | 19.2  |     |      | 26.9  |       |      | 29.6 |      |       | 18.9  |       |
| Approach LOS            |       | B     |     |      | C     |       |      | C    |      |       | B     |       |
| Queue Length 50th (ft)  | 232   | 230   |     | 0    | 351   | 0     | 4    | 4    | 0    | 53    | 53    | 126   |
| Queue Length 95th (ft)  | m241  | m230  |     | m13  | #429  | m5    | 11   | 11   | 0    | m86   | m85   | 159   |
| Internal Link Dist (ft) |       | 1628  |     |      | 1886  |       |      | 337  |      |       | 1295  |       |
| Turn Bay Length (ft)    | 195   |       |     | 200  |       | 200   | 120  |      | 65   | 205   |       |       |
| Base Capacity (vph)     | 432   | 1867  |     | 83   | 1021  | 526   | 83   | 88   | 212  | 398   | 399   | 906   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.80  | 0.51  |     | 0.11 | 0.82  | 0.17  | 0.06 | 0.06 | 0.04 | 0.23  | 0.23  | 0.57  |

Intersection Summary

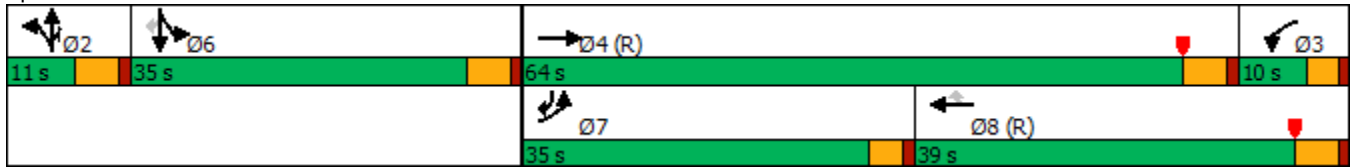
Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 78 (65%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 100  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.87  
 Intersection Signal Delay: 21.7  
 Intersection Capacity Utilization 66.8%  
 Analysis Period (min) 15  
 Intersection LOS: C  
 ICU Level of Service C

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: N Associated Road & Birch Street



Lanes, Volumes, Timings  
32: Voyager Ave/Olinda & Birch Street

AM Existing Plus Project  
AM Existing Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 95    | 595   | 74    | 31    | 508   | 127   | 27    | 23    | 16    | 75    | 2     | 93    |
| Future Volume (vph)        | 95    | 595   | 74    | 31    | 508   | 127   | 27    | 23    | 16    | 75    | 2     | 93    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 200   |       | 0     | 140   |       | 225   | 120   |       | 0     | 0     |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     | 0     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.95  | 0.95  | 1.00  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.983 |       |       |       | 0.850 |       | 0.938 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |       | 0.954 |       |
| Satd. Flow (prot)          | 1676  | 3296  | 0     | 1676  | 3353  | 1500  | 1676  | 1655  | 0     | 0     | 1684  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.585 |       |       |       | 0.682 |       |
| Satd. Flow (perm)          | 1676  | 3296  | 0     | 1676  | 3353  | 1500  | 1032  | 1655  | 0     | 0     | 1204  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 15    |       |       |       | 172   |       | 28    |       |       |       | 221   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3055  |       |       | 1784  |       |       | 760   |       |       |       | 496   |
| Travel Time (s)            |       | 69.4  |       |       | 40.5  |       |       | 17.3  |       |       |       | 11.3  |
| Peak Hour Factor           | 0.76  | 0.76  | 0.76  | 0.74  | 0.74  | 0.74  | 0.57  | 0.57  | 0.57  | 0.42  | 0.42  | 0.42  |
| Adj. Flow (vph)            | 125   | 783   | 97    | 42    | 686   | 172   | 47    | 40    | 28    | 179   | 5     | 221   |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 125   | 880   | 0     | 42    | 686   | 172   | 47    | 68    | 0     | 0     | 184   | 221   |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 12    |       |       |       | 12    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Perm  | NA    |       | Perm  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       |       | 2     |       |       |       | 6     |
| Permitted Phases           |       |       |       |       |       | 8     | 2     |       |       | 6     |       | 6     |



Lanes, Volumes, Timings  
32: Voyager Ave/Olinda & Birch Street

AM Existing Plus Project  
AM Existing Plus Project

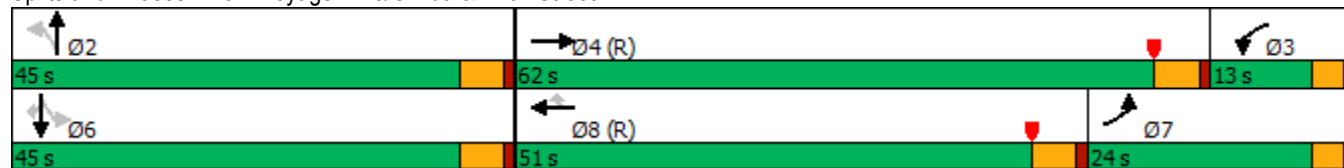


| Lane Group              | EBL   | EBT   | EBR | WBL   | WBT   | WBR   | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|-------|-------|-------|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3     | 8     | 8     | 2     | 2     |     | 6     | 6     | 6     |
| Switch Phase            |       |       |     |       |       |       |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 30.0  |     | 10.0  | 32.0  | 32.0  | 40.0  | 40.0  |     | 37.0  | 37.0  | 37.0  |
| Total Split (s)         | 24.0  | 62.0  |     | 13.0  | 51.0  | 51.0  | 45.0  | 45.0  |     | 45.0  | 45.0  | 45.0  |
| Total Split (%)         | 20.0% | 51.7% |     | 10.8% | 42.5% | 42.5% | 37.5% | 37.5% |     | 37.5% | 37.5% | 37.5% |
| Maximum Green (s)       | 20.0  | 57.0  |     | 9.0   | 46.0  | 46.0  | 40.0  | 40.0  |     | 40.0  | 40.0  | 40.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0   | 4.0   | 4.0   | 4.0   | 4.0   |     | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0   | 5.0   | 5.0   | 5.0   | 5.0   |     | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lead  |     | Lag   | Lead  | Lead  |       |       |     |       |       |       |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes   | Yes   | Yes   |       |       |     |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None  | C-Max | C-Max | Max   | Max   |     | Max   | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |       | 7.0   | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 18.0  |     |       | 20.0  | 20.0  | 28.0  | 28.0  |     | 25.0  | 25.0  | 25.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |       | 2     | 2     | 2     | 2     |     | 2     | 2     | 2     |
| Act Effct Green (s)     | 17.2  | 57.3  |     | 7.9   | 46.0  | 46.0  | 42.8  | 42.8  |     | 42.8  | 42.8  | 42.8  |
| Actuated g/C Ratio      | 0.14  | 0.48  |     | 0.07  | 0.38  | 0.38  | 0.36  | 0.36  |     | 0.36  | 0.36  | 0.36  |
| v/c Ratio               | 0.52  | 0.56  |     | 0.38  | 0.53  | 0.25  | 0.13  | 0.11  |     | 0.43  | 0.33  | 0.33  |
| Control Delay           | 45.0  | 5.8   |     | 63.0  | 27.9  | 4.6   | 29.1  | 18.2  |     | 34.4  | 5.1   | 5.1   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Delay             | 45.0  | 5.8   |     | 63.0  | 27.9  | 4.6   | 29.1  | 18.2  |     | 34.4  | 5.1   | 5.1   |
| LOS                     | D     | A     |     | E     | C     | A     | C     | B     |     | C     | A     | A     |
| Approach Delay          |       | 10.6  |     |       | 25.1  |       |       | 22.6  |     |       | 18.4  |       |
| Approach LOS            |       | B     |     |       | C     |       |       | C     |     |       | B     |       |
| Queue Length 50th (ft)  | 103   | 56    |     | 32    | 226   | 40    | 25    | 21    |     | 111   | 0     | 0     |
| Queue Length 95th (ft)  | m139  | 19    |     | m48   | 226   | m41   | 34    | 28    |     | 74    | 0     | 0     |
| Internal Link Dist (ft) |       | 2975  |     |       | 1704  |       |       | 680   |     |       | 416   |       |
| Turn Bay Length (ft)    | 200   |       |     | 140   |       | 225   | 120   |       |     |       |       |       |
| Base Capacity (vph)     | 279   | 1582  |     | 125   | 1285  | 681   | 368   | 607   |     | 429   | 676   |       |
| Starvation Cap Reductn  | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0     | 0     | 0     | 0     | 0     |     | 0     | 0     | 0     |
| Reduced v/c Ratio       | 0.45  | 0.56  |     | 0.34  | 0.53  | 0.25  | 0.13  | 0.11  |     | 0.43  | 0.33  | 0.33  |

Intersection Summary
























Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 101 (84%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 85  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.56  
 Intersection Signal Delay: 17.9 Intersection LOS: B  
 Intersection Capacity Utilization 47.7% ICU Level of Service A  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 32: Voyager Ave/Olinda & Birch Street



Lanes, Volumes, Timings  
12: N Associated Road & Birch Street

PM Existing Plus Project  
PM Existing Plus Project

|                            |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL  | NBT   | NBR   | SBL   | SBT   | SBR   |
| Lane Configurations        |  |  |   |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph)       | 265   | 911   | 11  | 5   | 1243  | 127   | 12   | 2   | 10  | 96  | 3   | 275   |
| Future Volume (vph)        | 265   | 911   | 11  | 5   | 1243  | 127   | 12   | 2   | 10  | 96  | 3   | 275   |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800   | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 195   |   | 0   | 200   |   | 200   | 120  |   | 65  | 205   |   | 0   |
| Storage Lanes              | 1   |   | 0   | 1   |   | 1   | 1  |   | 1   | 1   |   | 1   |
| Taper Length (ft)          | 90  |   |   | 90  |   |   | 90   |   |   | 90  |   |   |
| Lane Util. Factor          | 1.00  | 0.95  | 0.95  | 1.00  | 0.95  | 1.00  | 1.00   | 1.00  | 1.00  | 0.95  | 0.95  | 1.00  |
| Frt                        |   | 0.998   |   |   |   | 0.850   |  |   | 0.850   |   |   | 0.850   |
| Flt Protected              | 0.950   |   |   | 0.950   |   |   | 0.950  |   |   | 0.950   | 0.955   |   |
| Satd. Flow (prot)          | 1676  | 3346  | 0   | 1676  | 3353  | 1500  | 1676   | 1765  | 1500  | 1593  | 1601  | 1500  |
| Flt Permitted              | 0.950   |   |   | 0.950   |   |   | 0.950  |   |   | 0.950   | 0.955   |   |
| Satd. Flow (perm)          | 1676  | 3346  | 0   | 1676  | 3353  | 1500  | 1676   | 1765  | 1500  | 1593  | 1601  | 1500  |
| Right Turn on Red          |   |   | Yes   |   |   | Yes   |  |   | Yes   |   |   | Yes   |
| Satd. Flow (RTOR)          |   | 1   |   |   |   | 100   |  |   | 145   |   |   | 109   |
| Link Speed (mph)           |   | 30  |   |   | 30  |   |  | 30  |   |   |   | 30  |
| Link Distance (ft)         |   | 1708  |   |   | 1966  |   |  | 417   |   |   |   | 1375  |
| Travel Time (s)            |   | 38.8  |   |   | 44.7  |   |  | 9.5   |   |   |   | 31.3  |
| Peak Hour Factor           | 0.93  | 0.93  | 0.93  | 0.90  | 0.90  | 0.90  | 0.75   | 0.75  | 0.75  | 0.81  | 0.81  | 0.81  |
| Adj. Flow (vph)            | 285   | 980   | 12  | 6   | 1381  | 141   | 16   | 3   | 13  | 119   | 4   | 340   |
| Shared Lane Traffic (%)    |   |   |   |   |   |   |  |   |   | 48%   |   |   |
| Lane Group Flow (vph)      | 285   | 992   | 0   | 6   | 1381  | 141   | 16   | 3   | 13  | 62  | 61  | 340   |
| Enter Blocked Intersection | No  | No  | No  | No  | No  | No  | No   | No  | No  | No  | No  | No  |
| Lane Alignment             | Left  | Left  | Right   | Left  | Left  | Right   | Left   | Left  | Right   | Left  | Left  | Right   |
| Median Width(ft)           |   | 24  |   |   | 24  |   |  | 12  |   |   |   | 12  |
| Link Offset(ft)            |   | 0   |   |   | 0   |   |  | 0   |   |   |   | 0   |
| Crosswalk Width(ft)        |   | 16  |   |   | 16  |   |  | 16  |   |   |   | 16  |
| Two way Left Turn Lane     |   |   |   |   |   |   |  |   |   |   |   |   |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07   | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15  |   | 9   | 15  |   | 9   | 15   |   | 9   | 15  |   | 9   |
| Number of Detectors        | 1   | 2   |   | 1   | 2   | 1   | 1  | 2   | 1   | 1   | 2   | 1   |
| Detector Template          | Left  | Thru  |   | Left  | Thru  | Right   | Left   | Thru  | Right   | Left  | Thru  | Right   |
| Leading Detector (ft)      | 20  | 100   |   | 20  | 100   | 20  | 20   | 100   | 20  | 20  | 100   | 20  |
| Trailing Detector (ft)     | 0   | 0   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Detector 1 Position(ft)    | 0   | 0   |   | 0   | 0   | 0   | 0  | 0   | 0   | 0   | 0   | 0   |
| Detector 1 Size(ft)        | 20  | 6   |   | 20  | 6   | 20  | 20   | 6   | 20  | 20  | 6   | 20  |
| Detector 1 Type            | Cl+Ex   | Cl+Ex   |   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex  | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   | Cl+Ex   |
| Detector 1 Channel         |   |   |   |   |   |   |  |   |   |   |   |   |
| Detector 1 Extend (s)      | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |   | 94  |   |   | 94  |   |  | 94  |   |   |   | 94  |
| Detector 2 Size(ft)        |   | 6   |   |   | 6   |   |  | 6   |   |   |   | 6   |
| Detector 2 Type            |   | Cl+Ex   |   |   | Cl+Ex   |   |  | Cl+Ex   |   |   |   | Cl+Ex   |
| Detector 2 Channel         |   |   |   |   |   |   |  |   |   |   |   |   |
| Detector 2 Extend (s)      |   | 0.0   |   |   | 0.0   |   |  | 0.0   |   |   |   | 0.0   |
| Turn Type                  | Prot  | NA  |   | Prot  | NA  | Perm  | Split  | NA  | Prot  | Split   | NA  | pm+ov   |
| Protected Phases           | 7   | 4   |   | 3   | 8   |   | 2  | 2   | 2   | 6   | 6   | 7   |
| Permitted Phases           |   |   |   |   |   | 8   |  |   |   |   |   | 6   |

Lanes, Volumes, Timings  
12: N Associated Road & Birch Street

PM Existing Plus Project  
PM Existing Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR   | NBL  | NBT  | NBR  | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-------|------|------|------|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     | 8     | 2    | 2    | 2    | 6     | 6     | 7     |
| Switch Phase            |       |       |     |      |       |       |      |      |      |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   | 6.0  | 6.0  | 6.0  | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 30.0  |     | 10.0 | 33.0  | 33.0  | 11.0 | 11.0 | 11.0 | 35.0  | 35.0  | 10.0  |
| Total Split (s)         | 23.0  | 64.0  |     | 10.0 | 51.0  | 51.0  | 11.0 | 11.0 | 11.0 | 35.0  | 35.0  | 23.0  |
| Total Split (%)         | 19.2% | 53.3% |     | 8.3% | 42.5% | 42.5% | 9.2% | 9.2% | 9.2% | 29.2% | 29.2% | 19.2% |
| Maximum Green (s)       | 19.0  | 59.0  |     | 6.0  | 46.0  | 46.0  | 6.0  | 6.0  | 6.0  | 30.0  | 30.0  | 19.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   | 4.0  | 4.0  | 4.0  | 4.0   | 4.0   | 3.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   | 1.0  | 1.0  | 1.0  | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   | 5.0  | 5.0  | 5.0  | 5.0   | 5.0   | 4.0   |
| Lead/Lag                | Lead  | Lead  |     | Lag  | Lag   | Lag   |      |      |      |       |       | Lead  |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   | Yes   |      |      |      |       |       | Yes   |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   | 3.0  | 3.0  | 3.0  | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max | C-Max | Max  | Max  | Max  | Max   | Max   | None  |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   | 7.0   |      |      |      | 7.0   | 7.0   |       |
| Flash Dont Walk (s)     |       | 18.0  |     |      | 21.0  | 21.0  |      |      |      | 23.0  | 23.0  |       |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     | 2     |      |      |      | 2     | 2     |       |
| Act Effct Green (s)     | 19.0  | 67.0  |     | 6.0  | 46.0  | 46.0  | 6.0  | 6.0  | 6.0  | 30.0  | 30.0  | 54.0  |
| Actuated g/C Ratio      | 0.16  | 0.56  |     | 0.05 | 0.38  | 0.38  | 0.05 | 0.05 | 0.05 | 0.25  | 0.25  | 0.45  |
| v/c Ratio               | 1.08  | 0.53  |     | 0.07 | 1.07  | 0.22  | 0.19 | 0.03 | 0.06 | 0.16  | 0.15  | 0.46  |
| Control Delay           | 98.3  | 16.2  |     | 35.0 | 57.4  | 2.2   | 60.3 | 55.0 | 0.6  | 32.6  | 32.6  | 18.1  |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   |
| Total Delay             | 98.3  | 16.2  |     | 35.0 | 57.4  | 2.2   | 60.3 | 55.0 | 0.6  | 32.6  | 32.6  | 18.1  |
| LOS                     | F     | B     |     | C    | E     | A     | E    | D    | A    | C     | C     | B     |
| Approach Delay          |       | 34.5  |     |      | 52.2  |       |      | 35.6 |      |       | 22.0  |       |
| Approach LOS            |       | C     |     |      | D     |       |      | D    |      |       | C     |       |
| Queue Length 50th (ft)  | ~246  | 324   |     | 5    | ~640  | 16    | 12   | 2    | 0    | 37    | 36    | 129   |
| Queue Length 95th (ft)  | m#290 | m339  |     | m5   | m#650 | m19   | 30   | 11   | 0    | 67    | 66    | 136   |
| Internal Link Dist (ft) |       | 1628  |     |      | 1886  |       |      | 337  |      |       | 1295  |       |
| Turn Bay Length (ft)    | 195   |       |     | 200  |       | 200   | 120  |      | 65   | 205   |       |       |
| Base Capacity (vph)     | 265   | 1868  |     | 83   | 1285  | 636   | 83   | 88   | 212  | 398   | 400   | 734   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     | 0     | 0    | 0    | 0    | 0     | 0     | 0     |
| Reduced v/c Ratio       | 1.08  | 0.53  |     | 0.07 | 1.07  | 0.22  | 0.19 | 0.03 | 0.06 | 0.16  | 0.15  | 0.46  |

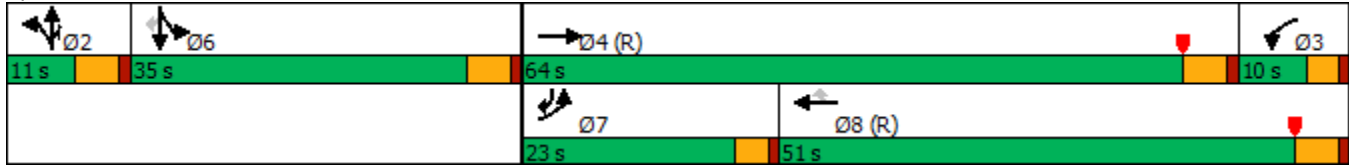
Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 79 (66%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow  
 Natural Cycle: 120  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 1.08  
 Intersection Signal Delay: 40.9  
 Intersection Capacity Utilization 73.0%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service C

~ Volume exceeds capacity, queue is theoretically infinite.

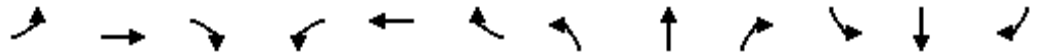
Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: N Associated Road & Birch Street



Lanes, Volumes, Timings  
32: Voyager Ave/Olinda & Birch Street

PM Existing Plus Project  
PM Existing Plus Project



| Lane Group                 | EBL   | EBT   | EBR   | WBL   | WBT   | WBR   | NBL   | NBT   | NBR   | SBL   | SBT   | SBR   |
|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Lane Configurations        |       |       |       |       |       |       |       |       |       |       |       |       |
| Traffic Volume (vph)       | 26    | 908   | 10    | 2     | 680   | 11    | 47    | 1     | 39    | 11    | 0     | 18    |
| Future Volume (vph)        | 26    | 908   | 10    | 2     | 680   | 11    | 47    | 1     | 39    | 11    | 0     | 18    |
| Ideal Flow (vphpl)         | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  | 1800  |
| Storage Length (ft)        | 200   |       | 0     | 140   |       | 225   | 120   |       | 0     | 0     |       | 0     |
| Storage Lanes              | 1     |       | 0     | 1     |       | 1     | 1     |       | 0     | 0     |       | 1     |
| Taper Length (ft)          | 90    |       |       | 90    |       |       | 90    |       |       | 90    |       |       |
| Lane Util. Factor          | 1.00  | 0.95  | 0.95  | 1.00  | 0.95  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Frt                        |       | 0.998 |       |       |       | 0.850 |       | 0.853 |       |       |       | 0.850 |
| Flt Protected              | 0.950 |       |       | 0.950 |       |       | 0.950 |       |       |       | 0.950 |       |
| Satd. Flow (prot)          | 1676  | 3346  | 0     | 1676  | 3353  | 1500  | 1676  | 1505  | 0     | 0     | 1676  | 1500  |
| Flt Permitted              | 0.950 |       |       | 0.950 |       |       | 0.747 |       |       |       | 0.722 |       |
| Satd. Flow (perm)          | 1676  | 3346  | 0     | 1676  | 3353  | 1500  | 1318  | 1505  | 0     | 0     | 1274  | 1500  |
| Right Turn on Red          |       |       | Yes   |       |       | Yes   |       |       | Yes   |       |       | Yes   |
| Satd. Flow (RTOR)          |       | 1     |       |       |       | 64    |       | 53    |       |       |       | 100   |
| Link Speed (mph)           |       | 30    |       |       | 30    |       |       | 30    |       |       |       | 30    |
| Link Distance (ft)         |       | 3055  |       |       | 1784  |       |       | 760   |       |       |       | 496   |
| Travel Time (s)            |       | 69.4  |       |       | 40.5  |       |       | 17.3  |       |       |       | 11.3  |
| Peak Hour Factor           | 0.90  | 0.90  | 0.90  | 0.83  | 0.83  | 0.83  | 0.73  | 0.73  | 0.73  | 0.70  | 0.70  | 0.70  |
| Adj. Flow (vph)            | 29    | 1009  | 11    | 2     | 819   | 13    | 64    | 1     | 53    | 16    | 0     | 26    |
| Shared Lane Traffic (%)    |       |       |       |       |       |       |       |       |       |       |       |       |
| Lane Group Flow (vph)      | 29    | 1020  | 0     | 2     | 819   | 13    | 64    | 54    | 0     | 0     | 16    | 26    |
| Enter Blocked Intersection | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    | No    |
| Lane Alignment             | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right | Left  | Left  | Right |
| Median Width(ft)           |       | 24    |       |       | 24    |       |       | 12    |       |       |       | 12    |
| Link Offset(ft)            |       | 0     |       |       | 0     |       |       | 0     |       |       |       | 0     |
| Crosswalk Width(ft)        |       | 16    |       |       | 16    |       |       | 16    |       |       |       | 16    |
| Two way Left Turn Lane     |       |       |       |       |       |       |       |       |       |       |       |       |
| Headway Factor             | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  | 1.07  |
| Turning Speed (mph)        | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     | 15    |       | 9     |
| Number of Detectors        | 1     | 2     |       | 1     | 2     | 1     | 1     | 2     |       | 1     | 2     | 1     |
| Detector Template          | Left  | Thru  |       | Left  | Thru  | Right | Left  | Thru  |       | Left  | Thru  | Right |
| Leading Detector (ft)      | 20    | 100   |       | 20    | 100   | 20    | 20    | 100   |       | 20    | 100   | 20    |
| Trailing Detector (ft)     | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Position(ft)    | 0     | 0     |       | 0     | 0     | 0     | 0     | 0     |       | 0     | 0     | 0     |
| Detector 1 Size(ft)        | 20    | 6     |       | 20    | 6     | 20    | 20    | 6     |       | 20    | 6     | 20    |
| Detector 1 Type            | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 1 Extend (s)      | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Queue (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 1 Delay (s)       | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |       | 0.0   | 0.0   | 0.0   |
| Detector 2 Position(ft)    |       | 94    |       |       | 94    |       |       | 94    |       |       |       | 94    |
| Detector 2 Size(ft)        |       | 6     |       |       | 6     |       |       | 6     |       |       |       | 6     |
| Detector 2 Type            |       | Cl+Ex |       |       | Cl+Ex |       |       | Cl+Ex |       |       |       | Cl+Ex |
| Detector 2 Channel         |       |       |       |       |       |       |       |       |       |       |       |       |
| Detector 2 Extend (s)      |       | 0.0   |       |       | 0.0   |       |       | 0.0   |       |       |       | 0.0   |
| Turn Type                  | Prot  | NA    |       | Prot  | NA    | Perm  | Perm  | NA    |       | Perm  | NA    | Perm  |
| Protected Phases           | 7     | 4     |       | 3     | 8     |       |       | 2     |       |       |       | 6     |
| Permitted Phases           |       |       |       |       |       | 8     | 2     |       |       | 6     |       | 6     |

Lanes, Volumes, Timings  
32: Voyager Ave/Olinda & Birch Street

PM Existing Plus Project  
PM Existing Plus Project



| Lane Group              | EBL   | EBT   | EBR | WBL  | WBT   | WBR   | NBL   | NBT   | NBR | SBL   | SBT   | SBR   |
|-------------------------|-------|-------|-----|------|-------|-------|-------|-------|-----|-------|-------|-------|
| Detector Phase          | 7     | 4     |     | 3    | 8     | 8     | 2     | 2     |     | 6     | 6     | 6     |
| Switch Phase            |       |       |     |      |       |       |       |       |     |       |       |       |
| Minimum Initial (s)     | 6.0   | 6.0   |     | 6.0  | 6.0   | 6.0   | 6.0   | 6.0   |     | 6.0   | 6.0   | 6.0   |
| Minimum Split (s)       | 10.0  | 30.0  |     | 10.0 | 32.0  | 32.0  | 40.0  | 40.0  |     | 37.0  | 37.0  | 37.0  |
| Total Split (s)         | 12.0  | 67.0  |     | 11.0 | 66.0  | 66.0  | 42.0  | 42.0  |     | 42.0  | 42.0  | 42.0  |
| Total Split (%)         | 10.0% | 55.8% |     | 9.2% | 55.0% | 55.0% | 35.0% | 35.0% |     | 35.0% | 35.0% | 35.0% |
| Maximum Green (s)       | 8.0   | 62.0  |     | 7.0  | 61.0  | 61.0  | 37.0  | 37.0  |     | 37.0  | 37.0  | 37.0  |
| Yellow Time (s)         | 3.0   | 4.0   |     | 3.0  | 4.0   | 4.0   | 4.0   | 4.0   |     | 4.0   | 4.0   | 4.0   |
| All-Red Time (s)        | 1.0   | 1.0   |     | 1.0  | 1.0   | 1.0   | 1.0   | 1.0   |     | 1.0   | 1.0   | 1.0   |
| Lost Time Adjust (s)    | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     | 0.0   | 0.0   | 0.0   |
| Total Lost Time (s)     | 4.0   | 5.0   |     | 4.0  | 5.0   | 5.0   | 5.0   | 5.0   |     | 5.0   | 5.0   | 5.0   |
| Lead/Lag                | Lag   | Lag   |     | Lead | Lead  | Lead  |       |       |     |       |       |       |
| Lead-Lag Optimize?      | Yes   | Yes   |     | Yes  | Yes   | Yes   |       |       |     |       |       |       |
| Vehicle Extension (s)   | 3.0   | 3.0   |     | 3.0  | 3.0   | 3.0   | 3.0   | 3.0   |     | 3.0   | 3.0   | 3.0   |
| Recall Mode             | None  | C-Max |     | None | C-Max | C-Max | Max   | Max   |     | Max   | Max   | Max   |
| Walk Time (s)           |       | 7.0   |     |      | 7.0   | 7.0   | 7.0   | 7.0   |     | 7.0   | 7.0   | 7.0   |
| Flash Dont Walk (s)     |       | 18.0  |     |      | 20.0  | 20.0  | 28.0  | 28.0  |     | 25.0  | 25.0  | 25.0  |
| Pedestrian Calls (#/hr) |       | 2     |     |      | 2     | 2     | 2     | 2     |     | 2     | 2     | 2     |
| Act Effct Green (s)     | 7.3   | 70.9  |     | 6.1  | 65.8  | 65.8  | 37.0  | 37.0  |     |       | 37.0  | 37.0  |
| Actuated g/C Ratio      | 0.06  | 0.59  |     | 0.05 | 0.55  | 0.55  | 0.31  | 0.31  |     |       | 0.31  | 0.31  |
| v/c Ratio               | 0.29  | 0.52  |     | 0.02 | 0.45  | 0.02  | 0.16  | 0.11  |     |       | 0.04  | 0.05  |
| Control Delay           | 46.0  | 4.3   |     | 45.5 | 16.3  | 2.1   | 31.6  | 8.8   |     |       | 29.6  | 0.2   |
| Queue Delay             | 0.0   | 0.0   |     | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   |     |       | 0.0   | 0.0   |
| Total Delay             | 46.0  | 4.3   |     | 45.5 | 16.3  | 2.1   | 31.6  | 8.8   |     |       | 29.6  | 0.2   |
| LOS                     | D     | A     |     | D    | B     | A     | C     | A     |     |       | C     | A     |
| Approach Delay          |       | 5.5   |     |      | 16.2  |       |       | 21.1  |     |       | 11.4  |       |
| Approach LOS            |       | A     |     |      | B     |       |       | C     |     |       | B     |       |
| Queue Length 50th (ft)  | 24    | 50    |     | 1    | 233   | 0     | 36    | 1     |     |       | 9     | 0     |
| Queue Length 95th (ft)  | m33   | 150   |     | m3   | 256   | m1    | 57    | 19    |     |       | 20    | 0     |
| Internal Link Dist (ft) |       | 2975  |     |      | 1704  |       |       | 680   |     |       | 416   |       |
| Turn Bay Length (ft)    | 200   |       |     | 140  |       | 225   | 120   |       |     |       |       |       |
| Base Capacity (vph)     | 111   | 1978  |     | 97   | 1838  | 851   | 406   | 500   |     |       | 392   | 531   |
| Starvation Cap Reductn  | 0     | 0     |     | 0    | 0     | 0     | 0     | 0     |     |       | 0     | 0     |
| Spillback Cap Reductn   | 0     | 0     |     | 0    | 0     | 0     | 0     | 0     |     |       | 0     | 0     |
| Storage Cap Reductn     | 0     | 0     |     | 0    | 0     | 0     | 0     | 0     |     |       | 0     | 0     |
| Reduced v/c Ratio       | 0.26  | 0.52  |     | 0.02 | 0.45  | 0.02  | 0.16  | 0.11  |     |       | 0.04  | 0.05  |

Intersection Summary

|   |   |
|---|---|
| Area Type:  | Other   |
| Cycle Length:   | 120   |
| Actuated Cycle Length:  | 120   |
| Offset:   | 114 (95%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow |
| Natural Cycle:  | 85  |
| Control Type:   | Actuated-Coordinated  |
| Maximum v/c Ratio:  | 0.52  |
| Intersection Signal Delay:  | 10.9  |
| Intersection LOS:   | B   |
| Intersection Capacity Utilization:                                | 44.6%   |
| ICU Level of Service:   | A   |
| Analysis Period (min):  | 15  |
| m Volume for 95th percentile queue is metered by upstream signal. |   |

Splits and Phases: 32: Voyager Ave/Olinda & Birch Street

